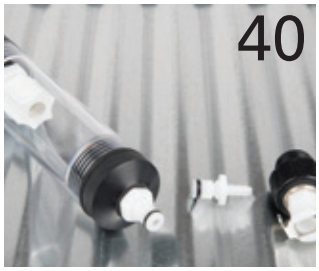
INDUSTRIAL SCIENTIFIC

GAS DETECTION and MONITORING SOLUTIONS



Since being founded in 1985, Industrial Scientific has sought to contribute to this world by helping people return home from work alive at the end of each day. We recognize that, at any given time, hundreds of thousands of people are betting their lives on the work we do as a company.

That being said, it is important to know what drives your supplier of gas detection equipment and solutions. At Industrial Scientific, we are driven by three things:

The first is **Our Mission**—Preserving human life on, above, and below the Earth. Delivering the highest quality, best customer service—every transaction, every time. What we do, preserving human life, shapes our expectations toward the output. It must be of the highest quality and exceed our customers' expectations. We invest aggressively in capital equipment and business systems to ensure this. We partner with the best suppliers we can find. We don't let anything out of our factories that we wouldn't bet our own lives on.

The second is **Our Vision**—Industrial Scientific people are dedicating their careers to eliminating death on the job by the year 2050. We know that gas detection alone will not prevent all workplace injuries or deaths. We are working toward the next generation of connected safety solutions to see an end to workplace fatalities in our lifetimes.

Last, we are guided by **Our Way**—Humble, hungry, and smart. Seek truth; speak truth. Serving others is our greatest joy. We expect our employees to be the most highly qualified for their positions in order to better serve our customers. We will not compromise by serving you with anyone but the best people.

If you are a current customer, thank you for your business and partnership. If not, I hope to have the opportunity to demonstrate how Industrial Scientific can help you create a safer workplace.

If I can ever be of any assistance, please do not hesitate to contact me directly at +1-412-490-1842 or at jmcelhattan@indsci.com.

Justin McElhattan
President

Why Industrial Scientific

Industrial Scientific's global gas detection and monitoring solutions are designed for a variety of applications

Customer Applications
- Oil & Natural Gas Producers
- Diversified Manufacturers
- Utilities
- Petroleum or Ethanol Refiners
- Chemical Manufacturers
- Municipalities
- Metal Producers
- Mines
- Fire Rescue
- Construction
- Aviation
- Agriculture or Farming
- Pharmaceutical Manufacturers
- Pulp and Paper Manufacturers
- Food And Beverage Production
- Service Providers
- . . . and others

Need the best solution for your application?
Visit www.indsci.com for our help desk and your nearest location.

Ease of Use and Serviceability
- Simple, one-button operation and calibration on most monitors
- Microprocessor-controlled operation
- Easy sensor replacement and calibration in the field
- Local servicing available through authorized distributors

Flexible Programs
- On-site product demonstrations
- Training courses available at corporate headquarters or customer's site
- Interactive computer-based and web-based training
- Variety of options for purchase and after sale service

Durability and Reliability
- Superior Radio Frequency Interference (RFI) and Electromagnetic Interference (EMI) shielding

State-of-the-Art Product Testing Laboratory
- Tests simulate harsh industrial environments for product design verification
- Rigorous testing for RFI, EMI, water and dust ingress, vibration and drop effects, temperature and humidity
- Ensures product reliability and durability

Global Presence
- Manufacturing facilities in USA and China
- Offices in many countries throughout the world
- Distribution network established worldwide
- Established international accounts – references available

Quality Assurance
- ISO 9001 Quality System Certified
- ISO 14001 Environmental Management System (EMS) Certified
- OHSAS 18001 Occupational Health and Safety Assessment Specification Certified
- CSA – Category Certified
- Third Party Certifications – for intrinsic safety, susceptibility to electromagnetic and radio frequency interference, ingress protection and performance

Environmentally Friendly
- Complete recycling process for returned and decommissioned instruments
- Recycling program for sensors, PC boards and batteries
- Compliant with WEEE and RoHS

Ownership Options

Industrial Scientific offers a variety of purchase plans to meet your specific needs and budget.

Purchase

All products are available for purchase through our worldwide network of distributors. To find a local distributor, visit www.indsci.com and click "where to buy" or contact a regional office in your area.

Certified Pre-Owned

Every Industrial Scientific certified pre-owned monitor gives you virtually all the durability and reliability of a new monitor. Only instruments that pass a rigorous multi-point inspection, including intrinsic safety approvals, are included in this program. Our certified pre-owned instruments are backed by a one-year warranty. Visit www.indsci.com/gas-detectors/certified-pre-owned/ for more information.

Gas Detection as a Service

iNet® Exchange is a subscription-based service that covers repair and replacement of gas detectors. iNet Exchange simplifies your gas detection program by allowing you to build a flexible fleet of instruments, avoid instrument downtime, and eliminate the cost of extra equipment.

Gas Detection Rental Program

When you need gas detectors and need them quickly, renting is the most efficient route. Gas detectors can be readied for same-day or next-day delivery, or pick up is available at our Pittsburgh, Houston, and Edmonton facilities.

- Fully-stocked inventory of over 25,000 pieces of fully-inspected rental equipment, including all accessories
- Gas detectors arrive ready to use with guaranteed reliability out of the box
- Pre-calibrated to NIST standards
- Chargers provided at no additional cost
- iNet customers automatically receive a special discount and rentals are pre-configured to match existing fleet
- Rental units added to iNet Exchange accounts will be monitored for service needs and exchange monitors will be sent immediately

To learn more, email: rental@indsci.com
or visit: www.indsci.com/rental

Product Availability

Industrial Scientific is committed to continually developing new products that provide customers with new capabilities, improvements, and enhancements to meet ever-evolving needs in portable gas detection. To best focus these development efforts, we must periodically streamline our product offerings so that we can continue to provide the highest quality products and services.

For our older, discontinued products, we will make every effort possible to provide repair services, replacement components, and spare parts for as long as reasonably possible.

The chart below identifies the types of support available and time frames for the listed portable instruments.

PORTABLE GAS DETECTORS, OLDER PRODUCT AVAILABILITY & SUPPORT SUMMARY

Product Available	No longer available; Service/Repair and all replacement parts available	Batteries, sensors, and filters available; Service/Repair subject to parts availability	All parts and service subject to parts availability
DS2 Docking Station	1-Sept-2015		1-Oct-2019
iNet DS Docking Station	1-June-2015		31-Dec-2019
			MX4 iQuad
			M40-M
			iTX
			M40
			MCAL
			GasBadge® Plus

For all other discontinued instruments, please contact Industrial Scientific for availability.

Product Certifications

Agency	Multi-Gas Monitors				Single Gas Monitors		
	MX6 iBrid	Ventis Pro5	Ventis MX4	Radius BZ1	Tango TX1	GasBadge Pro	T40 Rattler
ANZEx	•	•	•			•	•
ATEX	•	•	•	•	•	•	•
China CMC			•				•
China CPC	•	•	•	•	•		
China Ex	•	•	•	•	•	•	•
China KA			•				
China MA			•		•	•	•
CSA	•	•	•	•	•	•	•
EAC/GOST	•	•	•		•		
IECEx	•	•	•	•	•	•	•
INMETRO	•	•	•	•	•	•	
KC	•	•	•	•	•	•	
KIMM			•				
MDR	•						
MSHA	•	•	•				
PA-DEP	•	•	•				
SANS 1515/MASC-IA		•	•	•			
TIIS			•				
UL	•	•	•	•	•	•	•

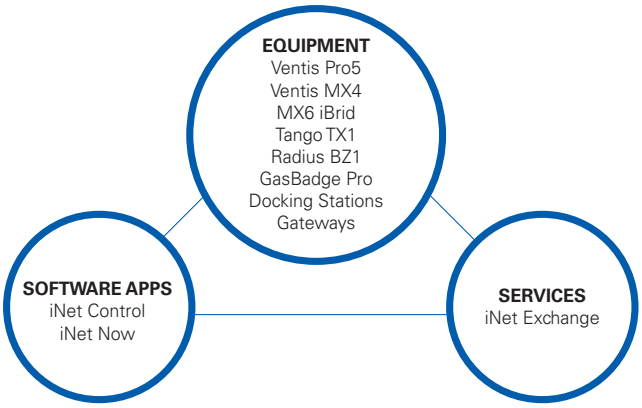
Certain limits apply to the number of sensor configurations. Call for details.

Whether you need live monitoring with real-time alerts, gas detection management with historical reports, or maintenance-free instrument exchanges, our iNet® suite of solutions will help you to be safer and more productive.

Integrated Solution for Gas Detection

iNet is an integrated solution for gas detection that can be easily configured to meet the needs and goals of your gas detection program.

Customers pick equipment, software, and services.



What Combination of iNet Offerings Best Meets Your Needs?

INET SOFTWARE AND SERVICES	REQUIRED EQUIPMENT	DESCRIPTION
iNet Control Software	DSXi*	Gas detection management software including equipment and compliance management, data records and reporting, and worker trends
iNet Exchange Service	DSXi or DSX-L	Gas detection as a service including automatic repair and replacement, and calibration gas replenishment
iNet Now Software	Smart Device, Ventis Pro5	Live monitoring software including map of workers and real-time text and email alerts

iNet® Exchange

iNet Exchange is a subscription-based service for gas detectors covering repair and replacement. iNet Exchange simplifies operations across your gas detection program, from gas detector availability to cost and ownership, by delivering equipment on demand. Parts, equipment, and shipping are covered, and you can even trade in damaged instruments.

- Always have the equipment you need, when you need it
- Eliminate unexpected gas detector repair and replacement expenses
- Avoid instrument downtime with proactive replacement, typically within 48 hours
- Get everything you need for your gas detection program including setup, training, calibration gas, maintenance, and repair through one service

See all features and benefits at
www.indsci.com/inet-exchange

Benefits of iNet Exchange vs. Warranties

✖ WARRANTY	✔ iNET EXCHANGE
RMA/warranty claim forms must be processed	Replacement gas detectors automatically ship
Weeks or months to receive repaired instrument	Equipment typically shipped within 48 hours
Extra gas detectors needed while waiting for warranty repair	Right-sized fleet always available for use

iNet® Control

iNet Control is gas detection management software that provides unparalleled visibility into your gas detection program. Easily manage your hazards, people, and equipment from anywhere with one simple dashboard.

See all features and benefits at
www.indsci.com/inet-control

- Generate reports on alarm counts by gas and user
- See when alarms are set above the recommended value
- Report on bump test and calibration trends
- Auto replenish calibration gas cylinders when iNet Control detects low levels
- Assign users to instruments either in the software or automatically using iAssign Tag technology
- Know who does not bump test regularly or who repeatedly enters areas known for high alarm activity
- For DSXi Docking Station customers, access to iNet Control is included.

Receive the Following Email Alerts to Help You Understand Gas Alarm Events, Usage, and Gas Detector Maintenance

What are your people exposed to?

- Gas type
- Alarm duration
- Peak gas concentration
- Average gas concentration
- Instrument, user, and location

Are instruments used properly?

- Who used which instruments without being bump tested or calibrated
- Who turned a monitor off during alarm
- Who changed a critical setting
- Who manually calibrated and bumped instruments

Are instruments working properly?

- Bump/calibration overdue
- Equipment not seen/no data
- Marginal/failed sensor
- Firmware updates

iNet® Now

iNet Now live monitoring software provides real-time visibility via iNet software, text, and email alerts for gas hazards, panic, and man-down situations, allowing you to see what's happening on a map and respond to incidents as they occur. With iNet Now, you can have confidence that workers are visible, even when they are miles away.

- Use real-time data to assess emergency situations and respond appropriately
- Verify mobile worker status without burdening or distracting workers with manual check-ins
- Improve the reporting of your safety incidents by following up in real time versus days or weeks later
- Always have the equipment you need, when you need it

What Do You Need to Get Up and Running with iNet Now?

1. Ventis Pro5 Multi-Gas Monitor with iNet Now firmware version 2.3 or above
2. A supported smart device gateway
3. The iNet Now Sync app downloaded and installed on a smart device
4. An active iNet Now account

iNET NOW SMART DEVICE GATEWAY REQUIREMENTS*

Operating System Requirements • iOS 10.0 or later • Android 5.1 or later	Estimated Data Usage • 15 MB per month
Bluetooth Requirements • Bluetooth Low Energy (BLE) 4.1	Estimated Battery Usage • Consumes 10% to 25% of smartphone battery depending on other apps in use • 10% off of Ventis Pro5 battery standard run time

*GPS and Bluetooth must be enabled on smart devices.

Note: See www.indsci.com/inet-now-sync-devices for most current list of supported devices.

LENS® WIRELESS

LENS® Wireless is the first gas detection solution that allows personal monitors and area monitors to wirelessly share gas readings and alarms with one another. Now when a gas hazard, man-down, or panic situation causes an instrument to alarm, all peers in the connected group will instantly be notified of the hazard and the person in danger, allowing them to make smarter, faster, safer decisions.

- View gas readings from other peers in your group on any monitor without needing a central controller to relay the information
- Share gas readings and alarms between Ventis® Pro5 Multi-Gas Monitors and Radius® BZ1 Area Monitors from up to 1.5 km (about 1 mile) away with wireless hopping between instruments
- Enjoy out-of-the-box operation with no site surveys, IT setup, licenses, or additional infrastructure
- Connect up to 25 devices in a group with a simple tap
- Self-healing mesh networks always stay connected, even if a single unit drops off

See all features and benefits at
www.indsci.com/lens-wireless

Average time to deploy 25 LENS Wireless instruments
(Joining 25 instruments into a group)

2 minutes

Average time to implement other wireless solutions
(Instrument, IT, and central controller setup)

2 hours – 2 days

SPECIFICATIONS*

Optional LENS Wireless, mesh network
Frequency: ISM license-free band (2.4 GHz)
Max Peers: 25 devices per network group
Range: Ventis Pro5: 100 m (300 ft) line of sight, face-to-face
Radius BZ1: 300 m (~1,000 ft) line of sight
Encryption: AES-128
Approvals: FCC Part 15, IC, CE/RED, others

*See www.indsci.com/wireless-certifications for country-specific wireless approvals and certifications.

LENS WIRELESS UPGRADE CARD

PART NO.	DESCRIPTION
18109494	Twenty-instrument upgrade card
18109493	Five-instrument upgrade card
18109492	One-instrument upgrade card

iASSIGN®
BEACON AND TAGS

iAssign® Beacons and Tags allow you to go beyond the basic "what" and "when" data from gas detectors to understand "who" and "where."

Using a pre-programmed iAssign Tag, operators can wirelessly enter a name into a device by simply tapping it with a tag. Now all data recorded in the instrument will be tagged with the user's name. This allows users to carry different gas monitors each day while still having a clear data record of who had an instrument when it went into alarm. When a worker (and tagged device) approaches an iAssign Beacon on your site, the beacon adds the device location to the data. iAssign Beacons can also be set with permission levels, allowing you to send automatic alerts to workers entering restricted areas.

- Locate problem sites across your facility
- Alert workers when entering restricted areas with simple-to-program proximity alarms
- Manage worker clearances without the need for separate devices, extra signage, or physical barriers
- Intrinsically-safe beacons can be used indoors or outdoors, and cover areas as small as 1 meter or as large as 30 meters

iAssign Tag Specifications				
Tag Type	Standard Tag	Waterproof Tag	All Weather Tag	Keychain Tag
Part Number	18109417	18109418	18109419	18109420
Thickness	0.7 mm	1.5 mm	3 mm	4 mm
Adhesive Back	Yes	Yes	No	No

iASSIGN TAG SPECIFICATIONS

TECHNOLOGY
Near Field Communication (NFC)

PROGRAMMING METHOD
iAssign app available in Google Play store

APPLICATION
iAssign tags may be used to track workers and locations

iASSIGN BEACON SPECIFICATIONS*

PART NUMBER
18109491

RUN TIME
Four years

WARRANTY
One year

INGRESS PROTECTION
IP65

TEMPERATURE RANGE
-40 °C to 50 °C

HUMIDITY RANGE
0% to 100% RH

DIMENSIONS
125 x 85 x 43mm (5 x 3.3 x 1.68 in)

WEIGHT
9 oz (250 g)

RANGE
Configurable from 1 to 3 m (3 to 100 ft)

TECHNOLOGY
Bluetooth, Near Field Communication (NFC)

PROGRAMMING METHOD
iAssign app available in Google Play store

ACCESSORIES
Instruction card, drywall anchors, screws

APPLICATION
iAssign Beacons may be used to track locations only

CERTIFICATIONS
ATEX: II 1 G, Ex ia IIC T4 Ga
c UL us: CI I, Div 1 Gr A, B, C, D, T4; CI II, Div 1, Gr E, F, G; CI I Zone 0, AEx ia IIC T4; Ex ia IIC T4
IECEx: Ex ia IIC T4 Ga
Wireless: FCC Part 15, IC

BLUETOOTH LOW ENERGY
Frequency: 2402 to 2480 MHz
Transmit power: +4 dBm
Based upon standard: Bluetooth v4.1
Contains FCC ID#: RYYEYSGJN (Taiyo Yuden)

* These specifications are based on performance averages and may vary by instrument.

See all features and benefits at
www.indsci.com/iassign

RGX™ GATEWAY

The portable RGX™ Gateway transmits location, gas readings, and real-time alerts from anywhere, including hazardous locations, so you can respond faster and improve productivity. The RGX Gateway is suitable for permit tasks that last hours, incidents that last days, or projects that last weeks.

- Receive real-time alerts and location data from personal gas monitors and area monitors
- Monitor hazardous locations and get data out of confined spaces in real time
- Up and running in minutes without the need for costly IT infrastructure
- Compatible with LENS Wireless-enabled Ventis Pro5 Multi-Gas Monitors and Radius BZ1 Area Monitors
- 168 hours of continuous run time
- Cell, wi-fi, or Ethernet connectivity options
- Automatic configuration and firmware updates without taking the gateway out of the field

See all features and benefits at
www.indsci.com/rgx

COMMON INSTRUMENT CONFIGURATIONS

PART NO.	DESCRIPTION
18109509-001	RGX Gateway, No SIM, wi-fi/Ethernet compatible, LENS Repeater Mode, cULus, North American Power Cord
18109509-011	RGX Gateway, USA, LTE (Verizon compatible), cULus, North American Power Cord
18109509-021	RGX Gateway, USA - LTE (AT&T compatible), cULus, North American Power Cord
18109509-041	RGX Gateway, Canada, LTE, (Telus/Bell/Rogers compatible), cULus, North American Power Cord
18109509-062	RGX Gateway, EMEA, 3G (Tele2 compatible), ATEX/IECEx, EU Power Cord
18109509-075	RGX Gateway, Asia Pacific, 3G (Telefonica compatible), China Ex, Australian Power Cord

CHARGERS AND POWER CORDS

PART NO.	DESCRIPTION
18109388-1A	Extended Run Time Power Supply A = Power Cord, where 1 = North America, 2 = Europe, 3 = Australia, 4 = UK
18109516	Intrinsically Safe Extended Run Time Power Supply (CSA)
17156261	50m Replacement Intrinsically Safe Cable

SPECIFICATIONS

WARRANTY 2 years

DIMENSIONS 11 x 9 x 6 in (28 x 23 x 15 cm)

WEIGHT 5.6 lb (2.5 kg)

CASE MATERIAL
Polycarbonate | Leather external case

RUN TIME / POWER SOURCE
Rechargeable Battery Pack:168 hours at 25 °C (77 °F), 5 minute non-critical data interval
Charge Time: Up to 8 hours
Power Voltage Inputs: 9-30 VDC (for operation in industrial facility, vehicle, and office)

TEMERATURE RANGE
-20 °C to 55 °C (-4 °F to 134 °F)

HUMIDITY RANGE 5% to 95% non-condensing (continuous)

INGRESS PROTECTION IP65

DATA LOGGING (IF SIGNAL LOST) 12 hours

LOCATION
GPS Radio; Antenna: Internal; Accuracy: ~10 m (32 ft) outdoors

SUPPLIED WITH GATEWAY
Charging Power Cord

OPTIONAL ACCESSORIES
Extended Run Time Power Supply (intrinsically safe or standard)
Mounting Kits (wall or magnet)

USER INTERACTION
Power Button with Status Indicator
Configuration: Locally over Ethernet or wi-fi, or remotely over-the-air (iNet® Control)
Firmware Upgrades: Over-the-air

COMMUNICATION*
LENS WIRELESS, MESH NETWORK
Frequency: ISM license-free band (2.4 GHz)
Max Instruments: 25 devices (including RGX)

RANGE
World Mode, RGX Gateway to RGX Gateway 300 m (~1,000 ft) line of sight
CE/RED Compliant Mode, RGX Gateway to RGX Gateway 185 m (~600 ft) line of sight
World Mode, RGX Gateway to Radius® BZ1 300 m (~1,000 ft) line of sight
CE/RED Compliant Mode, RGX Gateway to Radius BZ1 185 m (~600 ft) line of sight
World Mode, RGX Gateway to Ventis® Pro 100 m (~300 ft) line of sight
CE/RED Compliant Mode, RGX Gateway to Ventis Pro 100 m (~300 ft) line of sight

ENCRYPTION: AES-128

APPROVALS: FCC Part 15, IC, CE/RED, Others*

CELLULAR
LTE with 3G fallback
US: Verizon, AT&T, T-Mobile
Canada: Telus, Bell, Rodgers
EMEA: Tele2
Asia Pacific: Telefonica
Antenna: Internal Multi-Band

WI-FI
802.11 b/g/n 2.4 GHz wi-fi with WPA2 Enterprise security

ETHERNET (INTERNAL ONLY)
Ethernet 10/100 Mb

HAZARDOUS CERTIFICATIONS
ATEX**: Zone 2: Ex ec ic IIC T6 Gc; RoHS Compliant
China Ex: Zone 2: Ex ec ic IIC T6 Gc (CN)
cULus: Class I, Division 2, Groups A, B, C, D, T6; Zone 2: Ex ec ic IICT6 Gc (CA)
AEx ec ic IIC T6 Gc (US)
IECEx**: Zone 2: Ex ec ic IICT6 Gc

* See www.indsci.com/wireless-certifications for country-specific wireless approvals and certifications
** Requires leather case

SENSOR	MULTI-GAS MONITORS				SINGLE-GAS MONITORS		
	Ventis MX4	Ventis Pro5	MX6 iBrid	SafeCore	GasBadge Pro	Tango TX1	T40 Rattler
Oxygen (O_2) Standard	•	•	•	•	•		
Oxygen (O_2) Long-Life		•					
LEL Sensor (%LEL) – Catalytic Bead [HP]	• ★ [HP1]	• ★ [HP1]	• ★ [HP2]	• ★ [HP2]			
Ammonia (NH_3)		•	•	•	•		
Carbon Monoxide (CO)	•	•	•	•	•	•	•
Carbon Monoxide (CO High)			•	•			
CO/H_2 Low	•	•	•	•	•		
CO/H_2S (COSH)		•	•	•			
Chlorine (Cl_2)		•	•	•	•		
Chlorine Dioxide (ClO_2)			•		•		
Hydrogen (H_2)			•	•	•		
Hydrogen Chloride (HCl)			•				
Hydrogen Cyanide (HCN)		•	•	•	•		
Hydrogen Sulfide (H_2S)	•	•	•	•	•	•	•
Methane (0-5% vol) – Catalytic Bead [HP]	• ★ [HP1]	• ★ [HP1]	• ★ [HP2]				
Nitric Oxide (NO)			•	•			
Nitrogen Dioxide (NO_2)	•	•	•	•	•	•	
Phosphine (PH_3)		•	•	•	•		
Phosphine High (0-1,000 ppm)			•				
Sulfur Dioxide (SO_2)	•	•	•	•	•	•	
INFRARED							
Carbon Dioxide (CO_2) [HP]		• ☐ [HP1]	• ☐ [HP2]	•			
Carbon Dioxide/LEL (CO_2/LEL) [HP]		• ☐ [HP1]					
Carbon Dioxide/Methane (CO_2/CH_4) [HP]		• ☐ [HP1]					
Combustibles (0-100% LEL) [HP]			• ☐ [HP2]				
Methane (0-100% vol) [HP]		• ☐ [HP1]	• ☐ [HP2]				
Methane (0-100% LEL) [HP]			• ☐ [HP2]				
PHOTOIONIZATION							
PID for VOCs (Volatile Organic Compounds) [HP]			•	• [HP2]			

NOTES:

Sensor Not Available

• Sensor Available

☐ Maximum of one Infrared (IR) Sensor per instrument

★ Factory calibrated to Pentane (typically) or Methane (optionally)

[HP1] Maximum of one High Power Sensor per instrument

[HP2] Maximum of two High Power Sensors per instrument, but just one IR sensor (MX6 iBrid)

Certain limits apply to the number of sensor configurations.

VENTIS® MX4
MULTI-GAS MONITOR

The Ventis® MX4 is a four-gas monitor with the portability and size of a single-gas monitor. Eliminate the need for extra monitors and transition seamlessly from personal monitoring to confined space entry with the Ventis® Slide-on Pump—ideal for operators who wear their gas monitors primarily for personal protection but occasionally require a pump for confined space entries.

- Detect up to four gases with a wide range of sensor options
- Select alarm set points, set latch alarms, disable instrument shutdown while in alarm, and more
- Save time and reduce human error with maintenance and usage data available from iNet Control software
- Available with or without an integral pump, or with the Ventis Slide-on Pump for ultimate flexibility
- Non-pumped instruments compatible with 12-hour, 18-hour, or 20-hour batteries

See all features and benefits at
www.indsci.com/ventis

SPECIFICATIONS*

WARRANTY
Two-year warranty, including sensors and battery

CASE MATERIAL
Polycarbonate with protective rubber overmold

DIMENSIONS
103 x 58 x 30 mm (4.1 x 2.3 x 1.2 in) without Pump, Lithium-ion battery version
172 x 67 x 66 mm (6.8 x 2.6 x 2.6 in) with Pump, Lithium-ion battery version

WEIGHT
182 g (6.4 oz) without Pump, Lithium-ion battery version
380 g (13.4 oz) with Pump, Lithium-ion battery version

POWER SOURCE/RUN TIME
Rechargeable Slim Extended Lithium-ion battery (18 hours typical @ 20 °C) without Pump
Rechargeable Lithium-ion battery (12 hours typical @ 20 °C) without Pump
Rechargeable Extended-Range Lithium-ion battery
(20 hours typical @ 20 °C) without Pump; (12 hours typical @ 20 °C) with Pump
Replaceable AAA Alkaline battery
(8 hours typical @ 20 °C) without Pump; (4 hours typical @ 20 °C) with Pump

ALARMS
Ultra-bright LEDs, loud audible alarm (95 dB at 30 cm), and vibrating alarm

DISPLAY/READOUT
Backlit Liquid Crystal Display (LCD)

TEMPERATURE RANGE
-20 °C to 50 °C (-4 °F to 122 °F) **

HUMIDITY RANGE
15% to 95% non-condensing (continuous)

SENSORS
Combustible gases/methane – Catalytic Bead
O_2, CO, CO/H_2 low, H_2S, NO_2, SO_2 – Electrochemical

MEASURING RANGES

Combustible Gases:	0 to 100% LEL in 1% increments
Methane (CH_4):	0 to 5% of vol in 0.01% increments
Oxygen (O_2):	0 to 30% of vol in 0.1% increments
Carbon Monoxide (CO):	0-1,000 ppm in 1 ppm increments
Carbon Monoxide (CO/H_2 low):	0-1,000 ppm in 1 ppm increments
Hydrogen Sulfide (H_2S):	0-500 ppm in 0.1 ppm increments
Nitrogen Dioxide (NO_2):	0-150 ppm in 0.1 ppm increments
Sulfur Dioxide (SO_2):	0-150 ppm in 0.1 ppm increments

CERTIFICATIONS
INGRESS PROTECTION IP66/67

ANZEx:	Ex ia s Zone 0 I/IIC T4
ATEX:	Ex ia IIC T4 Ga and Ex ia I Ma; Equipment Group and Category II 1G/I M1
China CMC:	Metrology approval
China CPC:	CPA 2017-C103
China Ex:	Ex ia IIC T4 Ga; Ex ia d I Mb
China KA:	Approved for Underground Mines with CO, H_2S, O_2 and CH_4
CMA:	Approved for Underground Mines with CO, H_2S, O_2 and CH_4 (Note: Diffusion 17144453 pack only)
CSA:	Cl I, Div 1, G A-D, T4; Ex d ia IIC T4
EAC:	PBExdial X/1ExdiaIICT4 X
IECEx:	Ex ia IIC T4 Ga
INMETRO:	Ex ia IIC T4 Ga
KC:	Ex d ia IIC T4
KIMM:	Ex d ia IIC T4
MED:	Portable Multi-Gas Detector; Category 2 (MED 96/98/EC; MED 2012/32/EU Marine Directive) Li-ion
MSHA:	30 CFR Part 22; Permissible for underground mines; Li-ion
PA-DEP:	BFE 46-12 Permissible for PA Bituminous Underground Mines; Charger/docking station accessories; Category 1
SANS:	SANS 1515-1; Type A; Ex ia I/IIC T4; Li-ion
TIIS:	Ex ia IIC T4 X
UL:	Cl I, Div 1, Groups A-D, T4; Zone 0, AEx ia IIC T4; Cl II, Gr F-G (Carbonaceous and Grain dust)

SUPPLIED WITH MONITOR
Calibration Cup (without Pump), Sample Tubing (with Pump)

LANGUAGE
English (1), French (2), Spanish (3), German (4), Italian (5), Dutch (6), Portuguese (7), Russian (9), Polish (A), Czech (B), Chinese (C), Danish (D), Norwegian (E), Finnish (F), Swedish (G), Japanese (J)

*These specifications are based on performance averages and may vary by instrument.

**Operating temperatures above 50 °C (122 °F) may cause reduced instrument accuracy. Operating temperatures below -20 °C (-4 °F) may cause reduced instrument accuracy and affect display and alarm performance. See Product Manual for details.

MOST COMMON VENTIS MX4 INSTRUMENT CONFIGURATIONS

PART NO.	DESCRIPTION
VTS-K1234100y0z	Ventis MX4, LEL, CO, H_2S, O_2, Slim Extended Li-ion, Desktop Charger, Black
VTS-K1232111y0z	Ventis MX4 with Pump, LEL, CO, H_2S, O_2, Extended Li-ion, Desktop Charger, Safety Orange
VTS-K1034100y1z	Ventis MX4, LEL, CO, O_2, Slim Extended Li-ion, Desktop Charger, Soft Case, Black
VTS-K1032110y1z	Ventis MX4 with Pump, LEL, CO, O_2, Extended Li-ion, Desktop Charger, Soft Case, Black
VTS-K5234101y0z	Ventis MX4, LEL, SO_2, H_2S, O_2, Slim Extended Li-ion, Desktop Charger, Safety Orange
VTS-K1434100y1z	Ventis MX4, LEL, CO, NO_2, O_2, Slim Extended Li-ion, Desktop Charger, Soft Case, Black
VTS-K1432111y0z	Ventis MX4 with Pump, LEL, CO, NO_2, O_2, Extended Li-ion, Desktop Charger, Safety Orange

y = Agency Certification: 1 = UL/CSA, 2 = ATEX/IECEx, 3 = MSHA, 4 = ANZEx, 5 = China Ex, 7 = EAC(GOST-R/GOST-K), 8 = KC(HOSHA), 9 = INMETRO, A = MED, D = TIIS

z = Language: 1 = EN, 2 = FR, 3 = ES, 4 = DE, 5 = ITA, 6 = DUT, 7 = PT, 9 = RUS, A = POL, B = CZE, C = CN, D = DAN, E = NOR, F = FIN, G = SWE, J = JPN

VENTIS MX4 REPLACEMENT SENSORS

PART NO.	DESCRIPTION
17134461	Replacement Sensor, Oxygen (O_2)
17134479	Replacement Sensor, Hydrogen Sulfide (H_2S)
17134487	Replacement Sensor, Carbon Monoxide (CO)
17155564	Replacement Sensor, Carbon Monoxide/Low Hydrogen Interference (CO/H_2 low)
17134495	Replacement Sensor, Combustible Gas (LEL/CH_4)
17134503	Replacement Sensor, Nitrogen Dioxide (NO_2)
17156917	Replacement Sensor, Combustible Gas (%LEL/CH_4)*
17143595	Replacement Sensor, Sulfur Dioxide (SO_2)
17156979	Replacement Sensor, Combustible Gas (%LEL/Isobutane C_4H_{10})*

* For use with the DSX Standalone.

VENTIS MX4 ACCESSORIES

PART NO.	DESCRIPTION
17152395	Internal Dust Filter/Water Stop for Ventis Slide-on Pump
18109561	Internal Dust Filter/Water Stop for Ventis with Pump (Pack of 5)
17152429	Ventis diffusion water barrier assembly
17120528	Suspender Clip
17152455	Calibration cup for diffusion instruments

VENTIS MX4 PUMP CONVERSION KIT

PART NO.	DESCRIPTION
Convert your Pumped Ventis MX4 to a Non-Pumped Instrument	
17152828-01	Ventis Conversion Kit, Ventis with Pump to Ventis, Black, UL/CSA/ATEX/IECEx/EAC/KC
17152828-04	Ventis Conversion Kit, Ventis with Pump to Ventis without Pump, Black, ANZEx
17152828-11	Ventis Conversion Kit, Ventis with Pump to Ventis, Safety Orange, UL/CSA/ATEX/IECEx/EAC/KC

Ventis MX4 Confined Space Kits Include: Choice of Ventis MX4 with pump monitor, desktop charger, carrying case, calibration tubing, dust filter/water stop, calibration fitting, sample tubing, calibration gas (appropriate mix) with regulator, rugged carrying case.

VENTIS MX4 CONFINED SPACE KITS WITH INTEGRAL PUMP

PART NO.	DESCRIPTION
VK-K123211xy1z	Ventis Confined Space Kit - LEL, CO, H_2S, O_2
VK-K103211xy1z	Ventis Confined Space Kit - LEL, CO, O_2
VK-K023211xy1z	Ventis Confined Space Kit - LEL, H_2S, O_2
VK-K003211xy1z	Ventis Confined Space Kit - LEL, O_2

x = Instrument Color: 0 = Black, 1 = Safety Orange

y = Agency Certification: 1 = UL/CSA, 2 = ATEX/IECEx, 3 = MSHA, 4 = ANZEx, 5 = China Ex, 7 = EAC(GOST-R/GOST-K), 8 = KC(HOSHA), 9 = INMETRO, A = MED, D = TIIS

z = Language: 1 = EN, 2 = FR, 3 = ES, 4 = DE, 5 = ITA, 6 = DUT, 7 = PT, 9 = RUS, A = POL, B = CZE, C = CN, D = DAN, E = NOR, F = FIN, G = SWE, J = JPN

Ventis MX4 Confined Space Kits with Slide-on Pump Include: Ventis with LEL, CO, H_2S, and O_2 sensors, Ventis Slide-on Pump, 110 VAC desktop charger for each rechargeable instrument ordered (max of 2), calibration cup and tubing with T-fitting, dust filter/water stop, 10 feet of sample tubing, 34 liter cylinder of calibration gas, manual regulator, rugged hard plastic carrying case.

VENTIS MX4 CONFINED SPACE KITS WITH SLIDE-ON PUMP

PART NO.	DESCRIPTION
VKVSP4-ABCDEF	Ventis MX4 Confined Space Kit with Ventis Slide-on Pump (LEL, CO, H_2S, O_2)

A = LEL Sensor Calibration: K = Pentane, L = Methane
B = Instrument Color: 0 = Black, 1 = Safety Orange
C = Monitor Battery: 1 = Lithium-ion, 2 = Extended Range Lithium-ion, 3 = Alkaline
D = Pump Battery: 1 = Lithium-ion, 2 = Extended Range Lithium-ion
E = Agency Certification: 1 = UL/CSA, 2 = ATEX/IECEx, 3 = MSHA, 9 = INMETRO
F = Language: 1 = EN, 2 = FR, 3 = ES, 4 = DE, 5 = ITA, 6 = DUT, 7 = PT, 9 = RUS, A = POL, B = CZE, C = CN, D = DAN, E = NOR, F = FIN, G = SWE, J = JPN

COMMON CONFIGURATIONS OF CONFINED SPACE KITS WITH SLIDE-ON PUMP

PART NO.	DESCRIPTION
VKVSP4-K11111	Ventis MX4 Confined Space Kit – LEL (Pentane), CO, H_2S, O_2, Orange, Li-ion Ventis Battery, Li-ion Pump Battery, UL/CSA, English
VKVSP4-L01111	Ventis MX4 Confined Space Kit – LEL (Methane), CO, H_2S, O_2, Black, Li-ion Ventis Battery, Li-ion Pump Battery, UL/CSA, English
VKVSP4-K11211	Ventis MX4 Confined Space Kit – LEL (Pentane), CO, H_2S, O_2, Orange, Li-ion Ventis Battery, Ext. Range Li-ion Pump Battery, UL/CSA, English

VENTIS® PRO5
MULTI-GAS MONITOR

The Ventis® Pro5 is a five-gas monitor with a dedicated man-down alarm, panic button, and custom on-screen messages, making it easy for workers to communicate and operate. The Ventis Pro5 also provides flexible connected safety options, whether you want peer-to-peer alarm sharing, remote live monitoring with location details, or both.

- Flexible sensor configurations detect up to five gases simultaneously
- See alarms and gas readings from other Ventis Pro5 Multi-Gas Monitors and Radius BZ1 Area Monitors with integrated LENS Wireless Technology
- Send real time location and alarm data directly from Ventis Pro5 Multi-Gas Monitors to iNet Now Live Monitoring Software
- Track assets and people in real time with iAssign Technology
- Available with or without an integral pump, or with the Ventis Slide-on Pump for ultimate flexibility
- DualSense® Technology increases worker safety by using two sensors to detect the same gas
- Dock overdue and maintenance reminders
- Compatible with most Ventis MX4 accessories

Sensor & Configuration Options

The Ventis Pro5 offers sensor and configuration options for multiple industries and applications, including standard and non-standard 4-gas, 5-gas, and a methane IR sensor making it a cost-effective option for personal protection and confined space applications.

LEL (CH_4% Vol)	Cl_2	NO_2	IR HC
LEL (Methane)	CO	IR CH_4	HCN
LEL (Pentane)	CO/H_2 Low	IR CO_2	NH_3
O_2	CO/H_2S	IR CO_2/CH_4	PH_3
H_2S	SO_2	IR CO_2/LEL	

SPECIFICATIONS*

WARRANTY
Guaranteed for Life™. Warranted for as long as the instrument is supported by Industrial Scientific Corporation (excludes sensors, batteries, and filters). O_2, LEL, CO, and H_2S sensors warranted for three years. All other sensors warranted for two years. Pumps and batteries are warranted for two years.

KEYPAD
Two buttons for operation. Dedicated panic button.

DATA LOG
At least 3 months at 10-second intervals

EVENT LOGGING
60 alarm events

INGRESS PROTECTION
IP68 (submersion at 1.5 meters for 1 hour)

CASE MATERIAL
Polycarbonate with protective rubber overmold

DIMENSIONS
104 x 58 x 36 mm (4.1 x 2.3 x 1.4 in) without Pump
172 x 67 x 65 mm (6.8 x 2.6 x 2.6 in) with Pump
104 x 58 x 61 mm (4.1 x 2.3 x 2.4 in) with wi-fi or Cellular Battery

WEIGHT
200 g (7.05 oz) typical, without Pump
390 g (13.76 oz) typical, with Pump
243 g (8.5 oz) typical, with wi-fi Battery
244 g (8.6 oz) typical, with Cellular Battery

HUMIDITY RANGE
15% to 95% non-condensing (continuous)

TEMPERATURE RANGE
-40 °C to 50 °C (-40 °F to 122 °F) **

DISPLAY/READOUT
Backlit liquid crystal display (LCD)

COMMUNICATION
LENS WIRELESS MESH NETWORK
Frequency: ISM license-free band (2.405 - 2.480 GHz)
Max Peers: 25 devices per network group
Range: 100 m (300 ft) line of sight, face-to-face
Encryption: AES-128
Approvals: FCC Part 15, IC, CE/RED, others†

CELLULAR
LTE CAT M1
US: AT&T, Verizon
Canada: TBD

WI-FI
802.11 b/g/n 2.4GHz wi-fi with WPA2 security

See all features and benefits at
www.indsci.com/ventispro

SPECIFICATIONS*

ALARMS
Four visual alarm LEDs (two red, two blue);
95 decibel (dB) audible alarm at a distance of 10 cm (3.94 in); Vibration alarm

SENSORS
Combustible Gases/Methane – Catalytic Bead
O_2, CO, CO/H_2 low, H_2S, HCN, NH_3, NO_2, PH_3, SO_2, Cl_2 – Electrochemical
CO_2, CH_4, CO_2/LEL, CO_2/CH_4, HC – Infrared

MEASURING RANGES

CATALYTIC BEAD	
Combustible Gases:	0-100% LEL in 1% increments
Methane (CH_4):	0-5% of vol in 0.01% increments
ELECTROCHEMICAL	
Ammonia (NH_3):	0-500 ppm in 1 ppm increments
Carbon Monoxide (CO):	0-2,000 ppm in 1 ppm increments
Carbon Monoxide (CO/H_2 low):	0-1,000 ppm in 1 ppm increments
Carbon Monoxide/Hydrogen Sulfide:	CO: 0-1,500 ppm in 1 ppm increments H_2S: 0-500 ppm in 0.1 ppm increments
Chlorine (Cl_2):	0-50ppm in 0.1 ppm increments
Hydrogen Sulfide (H_2S):	0-500 ppm in 0.1 ppm increments
Hydrogen Cyanide (HCN):	0-30 ppm in 0.1 ppm increments
Nitrogen Dioxide (NO_2):	0-150 ppm in 0.1 ppm increments
Oxygen (O_2) (Standard/Long-Life):	0-30% of vol in 0.1% increments
Phosphine (PH_3):	0-10 ppm in 0.01 ppm increments
Sulfur Dioxide (SO_2):	0-150 ppm in 0.1 ppm increments
INFRARED	
Carbon Dioxide (CO_2):	0-5% vol in 0.01% increments
Methane (CH_4):	0-5% vol in 0.01% increments 5-100% vol in 0.1% increments
Carbon Dioxide/Combustible:	CO_2: 0-5% vol in 0.01% increments LEL: 0-100% LEL in 1% increments
Carbon Dioxide/Methane:	CO_2: 0-5% vol in 0.01% increments CH_4: 0-5% vol in 0.01% increments CH_4: 5-100% vol in 0.1% increments
Hydrocarbons:	0-100% LEL in 1% increments

CERTIFICATIONS
INGRESS PROTECTION IP68

ANZEx:	Ex ia I Ma/Ex ia IIC T4 Ga, -40 °C ≤ Ta ≤ 50 °C Ex d ia I Mb/Ex d ia IIC T4 Gb IR sensor, -20 °C ≤ Ta ≤ 50 °C IR sensor
ATEX:	Equipment Group and Category II 1G, Ex ia IIC, Ga, T4 Equipment Group and Category II 2G, Ex d ia IIC, Gb, T4, IR sensor
China CPC:	CPA 2017-C103
China Ex:	Ex ia IIC T4 Ga, -40 °C ≤ Ta ≤ 50 °C; Ex d ia IIC T4 Gb IR sensor, -20 °C ≤ Ta ≤ 50 °C IR sensor
CSA:	Cl I, Div 1, Gr A-D, T4; Cl I, Zone 1, Ex d ia IIC, T4 | C22.2 No. 152 for % LEL reading only
IECEx:	Cl I, Zone 0, Ex ia IIC, Ga, T4; Cl I, Zone 1, Ex d ia IIC, Gb, T4, IR sensor
INMETRO:	Ex ia IIC T4 Ga, -40 °C ≤ Ta ≤ 50 °C Ex d ia IIC T4 Gb IR sensor, -20 °C ≤ Ta ≤ 50 °C IR sensor
KC:	Ex d ia IIC T4
MSHA:	30 CFR Part 22; Permissible for underground mines
PA-DEP:	BFE 46-12 Permissible for PA Bituminous underground mines
UL:	Cl I, Div 1, Gr A-D, T4; Cl II, Div 1, Gr E-G, T4 Cl I, Zone 0, AEx ia IIC, T4; Cl I, Zone 1, AEx d ia II C, T4, IR sensor

Ventis Pro5 with wi-fi and cell: only certified to ATEX, IECEx, UL and CSA

See www.indsci.com/ventispro for all certifications.

POWER SOURCE/RUN TIME
Rechargeable Slim Extended Lithium-ion battery (no Pump option)
(18 hours typical @ 20 °C) with LEL
(54 hours typical @ 20 °C) with IR

Rechargeable Lithium-ion battery (no Pump option)
(12 hours typical @ 20 °C) with LEL
(36 hours typical @ 20 °C) with IR

Rechargeable Extended-Range Lithium-ion battery with LEL
(23 hours typical @ 20 °C) without Pump
(18 hours typical @ 20 °C) with Pump

Rechargeable Extended-Range Lithium-ion battery with IR
(72 hours typical @ 20 °C) without Pump
(32 hours typical @ 20 °C) with Pump

Rechargeable Wi-fi Lithium-ion battery (no Pump option)
(16 hours typical @ 20 °C) with LEL

Rechargeable Cellular Lithium-ion battery (no Pump option)
(16 hours typical @ 20 °C) with LEL

WIRELESS CERTIFICATIONS
Ventis Pro5 Instruments: FCC, ISED – Canada, EU Radio Equipment Directive (R.E.D.) and many other countries

Ventis Pro5 with wi-fi: FCC, ISED – Canada, EU Radio Equipment Directive (R.E.D.)

Ventis Pro5 with LTE Cat M1 Cellular: FCC, ISED-Canada, PTCRB, AT&T, and Verizon

SUPPLIED WITH MONITOR
Calibration Cup (without Pump), Sample Tubing (with Pump), Reference Guide

LANGUAGE
English, French, Spanish, German, Italian, Dutch, Portuguese, Polish

Build and price your Ventis Pro online
with the Instrument Builder
www.indsci.com/ventisprobuilder

Will You Use the Ventis Pro to Monitor Confined Spaces?

Ventis Pro5 Confined Space Kits Include: Ventis Pro5 instrument with integral pump, desktop charger, reference guide, calibration tubing with T-fitting, dust filter/water stop, sample tubing, calibration gas (appropriate mix) with manual regulator, and rugged hard plastic case.

VENTIS PRO5 CONFINED SPACE KITS WITH INTEGRAL PUMP

PART NO.	DESCRIPTION
V5K-KJ5Y211xy0z	Ventis Pro5 Confined Space Kit – LEL (Pentane), CO/H_2S, SO_2, O_2
V5K-KJ4Y211xy0z	Ventis Pro5 Confined Space Kit – LEL (Pentane), CO/H_2S, NO_2, O_2
V5K-KJ6Y211xy0z	Ventis Pro5 Confined Space Kit – LEL (Pentane), CO/H_2S, NH_3, O_2

Y = Long-Life Oxygen Sensor
x = Instrument Color: 0 = Black, 1 = Safety Orange
y = Agency Certification: 1 = UL/CSA, 2 = ATEX/IECEx, 3 = MSHA, 9 = INMETRO
0 = Non-wireless
z = Language: 1 = EN, 2 = FR, 3 = ES, 4 = DE, 5 = IT, 6 = DU, 7 = PT, A = PL

VENTIS PRO5 MOST COMMON CONFIGURATORS

PART NO.	DESCRIPTION
VP5-KJ5Y2111101	Ventis Pro5 with Pump – LEL (Pentane), CO/H_2S, SO_2, O_2, Extended Li-ion, Desktop Charger, Safety Orange
VP5-KJ4Y4101101	Ventis Pro5 – LEL (Pentane), CO/H_2S, NO_2, O_2, Slim Extended Li-ion, Desktop Charger, Safety Orange
VP5-KJ6Y2110101	Ventis Pro5 with Pump – LEL (Pentane), CO/H_2S, NH_3, O_2, Extended Li-ion, Desktop Charger, Black
VP5-U12Y2110101	Ventis Pro5 with Pump – CO_2/LEL IR, CO, H_2S, O_2, Extended Li-ion, Desktop Charger, Black

VENTIS PRO5 NAMEPLATES

PART NO.	DESCRIPTION
Better manage your fleet of instruments using color-coded nameplates on your Ventis Pro instruments.	
17156848	Ventis Pro5 Nameplate, Blue
17156849	Ventis Pro5 Nameplate, Yellow
17156850	Ventis Pro5 Nameplate, Green

VENTIS PRO5 iASSIGN ACCESSORIES

PART NO.	DESCRIPTION
Use iAssign Tags and Beacons to manage the users and sites associated with your Ventis Pro instruments.	
18109417	iAssign Tag, Standard (10 pack)
18109418	iAssign Tag, Waterproof (10 pack)
18109419	iAssign Tag, All Weather Outdoor (10 pack)
18109420	iAssign Tag, Keychain (10 pack)
18109434	iAssign Tag, Sample Pack (1 each of the 4 tag types)
18109491	iAssign Beacon

VENTIS PRO5 PUMP CONVERSION KITS

PART NO.	DESCRIPTION
Convert your non-pumped Ventis Pro5 Instrument to an instrument with an integrated pump.	
VPP-0011	Ventis Pro5 with Pump, No Battery, Black, UL/CSA, English
VPP-2011	Ventis Pro5 with Pump, Lithium-ion Extended Range Battery, Black, UL/CSA, English
VPP-0111	Ventis Pro5 with Pump, No Battery, Safety Orange, UL/CSA, English
VPP-2111	Ventis Pro5 with Pump, Lithium-ion Extended Range Battery, Safety Orange, UL/CSA, English

VENTIS PRO REPLACEMENT SENSORS

PART NO.	DESCRIPTION
17155306-1	Replacement Sensor, Ventis Pro5, Carbon Monoxide, 6 Series
17155306-2	Replacement Sensor, Ventis Pro5, Hydrogen Sulfide, 6 Series
17155304-2	Replacement Sensor, Ventis Pro5, Hydrogen Sulfide, 4 Series
17155304-3	Replacement Sensor, Ventis Pro5, Oxygen (O_2), 4 Series
17155304-Y	Replacement Sensor, Ventis Pro5, Long-Life Oxygen (O_2)
17155306-4	Replacement Sensor, Ventis Pro5, Nitrogen Dioxide, 6 Series
17155306-5	Replacement Sensor, Ventis Pro5, Sulfur Dioxide (SO_2), 6 Series
17155306-6	Replacement Sensor, Ventis Pro5, Ammonia (NH_3), 6 Series
17155306-9	Replacement Sensor, Ventis Pro5, Phosphine (PH_3), 6 Series
17155306-B	Replacement Sensor, Ventis Pro5, Hydrogen Cyanide (HCN), 6 Series
17155306-G	Replacement Sensor, Ventis Pro5, Carbon Monoxide/Low Hydrogen Interference (CO/H_2 low), 6 Series
17155306-J	Replacement sensor, Ventis Pro5, Carbon Monoxide/ Hydrogen Sulfide (COSH), 6 series
17155304-J	Replacement Sensor, Ventis Pro5, Carbon Monoxide/ Hydrogen Sulfide (COSH), 4 Series
17155304-K	Replacement Sensor, Ventis Pro5, LEL (Pentane), 4 Series Catalytic
17155304-L	Replacement Sensor, Ventis Pro5, LEL (Methane), 4 Series Catalytic
17155304-M	Replacement Sensor, Ventis Pro5, CH_4 (0-5% vol), 4 Series Catalytic
17155304-U	Replacement Sensor, Ventis Pro5, Carbon Dioxide/ Hydrocarbon (CO_2/LEL), 4 Series IR
17155304-V	Replacement Sensor, Ventis Pro5, Carbon Dioxide/ Methane (CO_2/CH_4), 4 Series IR
17155304-Q	Replacement Sensor, Ventis Pro5, Carbon Dioxide (CO_2)
17156920	DualSense Pack, Ventis Pro5, Oxygen (O_2), 4 Series
17156919	DualSense Pack, Ventis Pro5, Carbon Monoxide/ Hydrogen Sulfide (COSH), 6 Series
17157781	DualSense Pack, Ventis Pro5, Carbon Monoxide (CO)
17157782	DualSense Pack, Ventis Pro5, Hydrogen Sulfide (H_2S)
17157783	DualSense Pack, Ventis Pro5, Sulfur Dioxide (SO_2)
17155306-7	Replacement Sensor, Ventis Pro5, Chlorine (Cl_2)

17156849 Yellow Nameplate | **17156848** Blue Nameplate | **17156850** Green Nameplate

VENTIS PRO5 REPLACEMENT FILTERS

PART NO.	DESCRIPTION
18109613	Speaker dust barriers for Ventis Pro5 (pack of 10)
18109436	Sensor Barrier Assembly, Ventis Pro5 (Includes gasket and membrane for both upper and both lower sensors)
17156945-0	Replacement Ventis Pro5 Integral Pump Door, Black
17156945-1	Replacement Ventis Pro5 Integral Pump Door, Orange
17152395	Replacement Dust Filter/Water Stop for Ventis Slide-on Pump
17129909	Replacement Inlet Cap

VENTIS BATTERIES

SLIM EXTENDED BATTERIES

Provide 18 hours of run time when used with a non-pumped instrument at room temperature with LEL, O_2, H_2S, and CO sensors.

PART NO.	DESCRIPTION	COMPATIBLE WITH:
VTSB-4XY	Ventis Slim Extended Li-ion Battery Kit	Ventis MX4 Instruments Ventis Pro5 Instruments
	X = Color: 0 = Black, 1 = Orange (Ventis MX4 only) Y = Certifications: 1 = UL/CSA/ATEX/IECEx	

STANDARD BATTERIES

Provide 12 hours of run time when used with a non-pumped instrument at room temperature with LEL, O_2, H_2S, and CO sensors.

PART NO.	DESCRIPTION	COMPATIBLE WITH:
VTSB-1XY	Ventis Li-ion Battery Kit	Ventis MX4 Instruments Ventis Pro5 Instruments Ventis Slide-on Pumps
	X = Color: 0 = Black, 1 = Orange (Ventis MX4 only) Y = Certifications: 1 = UL/CSA/ATEX/IECEx/EAC (GOST-R-GOST-K)/ KC (KOSHA)/MED/SANS 1515 2 = MSHA 3 = China EX 4 = ANZEx 5 = IMMETRO D = TIIS	

EXTENDED RUN TIME BATTERIES

Provide 12 hours of run time when used with pumped instrument at room temperature with LEL, O_2, H_2S, and CO sensors.

PART NO.	DESCRIPTION	COMPATIBLE WITH:
VTSB-2XY	Ventis Extended Li-ion Battery Kit X = Color Y = Certifications	Ventis MX4 Instruments Ventis Pro5 Instruments Ventis Slide-on Pumps
17148313-Y	Battery Pack, Li-ion, Extended, Ventis Y = Certifications	Ventis MX4 Instruments with pump Ventis Pro5 Instruments with pump
	X = Color: 0 = Black, 1 = Orange (Ventis MX4 only) Y = Certifications: 1 = UL/CSA/ATEX/IECEx/EAC (GOST-R-GOST-K)/ KC (KOSHA)/MED/SANS 1515 2 = MSHA 3 = China EX 4 = ANZEx 5 = IMMETRO D = TIIS	

ALKALINE BATTERIES

Uses 2 AAA batteries for a quick in-field battery replacement. Provides 8 hours of run time with a non-pumped instrument and 4 hours of run time with a pumped instrument. Run time estimates are made at room temperature using LEL, O_2, H_2S, and CO sensors.

PART NO.	DESCRIPTION	COMPATIBLE WITH:
VTSB-3XY	Ventis MX4 Alkaline Battery Kit X = Color Y = Certifications	Ventis MX4 Instruments
17150608	Battery Pack, AAA, Ventis MX4	Ventis MX4 Instruments with pump
17154577-XY	Kit, Battery, Alkaline, VSP X = Color Y = Certifications	Ventis Slide-on Pumps
	X = Color: 0 = Black, 1 = Orange (Ventis MX4 only) Y = Certifications: 1 = UL/CSA/ATEX/IECEx/EAC (GOST-R-GOST-K)/ KC (KOSHA)/MED/SANS 1515 2 = MSHA 3 = China EX 4 = ANZEx 5 = IMMETRO C = CHINA KA D = TIIS	

VTSB-1XY
Li-ion Battery

VTSB-4XY
Slim Extended Li-ion Battery

VTSB-2XY
Extended Li-ion Battery

18108191
Ventis Charger

18108653
Truck-mount charger, hard wired

18108651
Automotive charger

VENTIS CHARGERS

PART NO.	DESCRIPTION
Chargers are compatible with all standard, extended, or slim extended Li-ion batteries.	
18108191	Single-Unit Charger
18108209	Single-Unit Charger/Datalink (includes software)
18108651	Single-Unit Automotive Charger, 12VDC
18108652	Single-Unit Truck Mount Charger, 12VDC, with Cigarette Adapter
18108653	Single-Unit Truck Mount Charger, 12VDC, Hard Wired
18108650-A	6-Unit Charger: A – Power-Cord Type 0 = US 4 = ITA 1 = UK 5 = DEN 2 = EU 6 = SWZ 3 = AUS

V•CAL FOR VENTIS

PART NO.	DESCRIPTION
18108631-AB	V•Cal™ Calibration Station A = Instrument type: 0 = Ventis, 1 = Ventis with Pump B = Power Cord Type: 0 = US, 1 = UK, 2 = EU, 3 = AUS, 4 = ITA, 5 = DEN, 6 = SWZ
18107763	Serial data dot matrix printer for V•Cal™ – 5 volt printer powered by the calibration station enables calibration report printing
17135518	V•Cal Printer Paper
17127044	V•Cal Printer Toner
17109919	Fresh Air Filter

VENTIS CASES

PART NO.	DESCRIPTION
Nylon carrying cases are soft fabric cases with a wrist strap.	
18108175	Nylon Carrying Case, Ventis without Pump, Li-ion Battery
18108183	Nylon Carrying Case, Ventis without Pump, Extended Li-ion Battery, Slim Extended Li-ion Battery, or Alkaline Battery
18108810	Nylon Carrying Case, Ventis with Pump
Leather carrying cases feature rigid high-quality leather and provide protection for your instrument against scratches and impact.	
18108813	Leather Carrying Case with Display, Ventis without Pump, Li-ion Battery
18108814	Leather Carrying Case with Display, Ventis without pump, Extended Li-ion Battery, Slim Extended Li-ion Battery, or Alkaline Battery
18108811	Leather Carrying Case with Display, Ventis MX4 with Pump
18109517	Leather Carrying Case with Display, Ventis Pro with Pump (includes cutout for Panic Button)

VENTIS®
SLIDE-ON PUMP

The Ventis® Slide-on Pump is ideally suited for operators who wear their gas monitors for personal protection but occasionally require a pump for confined space entries. Available in black or safety orange and powered by its own battery, the slide-on pump is compatible with the Ventis MX4 and Ventis Pro5 Multi-Gas Monitors.

SPECIFICATIONS*

INSTRUMENT WARRANTY
Two-year warranty, excluding consumables (i.e. filters)

CASE MATERIAL
Polycarbonate with protective rubber overmold

SAMPLE DRAW CAPABILITY
Up to 15.2 meters (50 feet)

DIMENSIONS
143 x 81 x 68 mm (5.6 x 3.2 x 2.7 in) Lithium-ion Battery version
143 x 81 x 85 mm (5.6 x 3.2 x 3.3 in) Extended Range Lithium-ion Battery version
143 x 81 x 73 mm (5.6 x 3.2 x 2.9 in) Alkaline Battery version

WEIGHT
270 g (9.5 oz) Lithium-ion Battery version
316 g (11.2 oz) Extended Range Lithium-ion Battery version
284 g (10.0 oz) Alkaline Battery version

OPERATING TEMPERATURE RANGE
-20 °C to 50 °C (-4 °F to 122 °F)

OPERATING HUMIDITY RANGE
15% to 95% non-condensing (continuous)

POWER SOURCE/RUN TIME
Rechargeable Lithium-ion battery, 18 hours @ 20 °C
Rechargeable Extended Range Lithium-ion battery, 36 hours @ 20 °C
Replaceable AAA alkaline battery, 10 hours @ 20 °C

PUMP FAULT ALARMS
Ultra-bright LEDs
Loud audible alarm (90 dB at 30 cm)

IP RATING
Third-party certified IP67

CERTIFICATIONS
INGRESS PROTECTION: IP66/67

ATEX:	Ex ia I Ma/Ex ia IIC T4 Ga; Equipment Group/Category: I M1/II 1G
China Ex:	Ex ia IIC T4 Ga
CSA:	CI I, Div 1, Group A-D, T4; Ex ia IIC T4
GOST- EAC:	0 Ex ia IIC X T4; PO Ex ia I X
IECEx:	Ex ia IIC T4 Ga
INMETRO:	Ex ia IIC T4 Ga
UL:	CI I, Div 1, Gr A-D, T4; CI I, Zone 0, AEx ia IIC T4 Ga; CI II, Gr F-G (Carbonaceous and Grain Dust)

*All specifications are based on a typical instrument and typical performance of the instrument, and are subject to variability.

NOTE: Charger is not included with the Ventis Slide-on Pump. The Ventis Slide-on Pump uses the standard Ventis chargers (18108191, 18108209, 18108651, 18108652, 18108653, 18108650-A) shown on the Ventis MX4 page. "X" denotes color where 0 = Black, 1 = Safety Orange "Y" denotes approvals where 1 = UL, CSA, ATEX, IECEx, INMETRO, and GOST- EAC; 3 = China EX

VENTIS SLIDE-ON PUMP – MODEL# VSP MATRIX

EXAMPLE: 18109162-1111 – Ventis Slide-on Pump, lithium-ion battery, Safety Orange, UL/CSA, EN-FR-ES-DE-CN	18109162-	1	1	1	1
DESCRIPTION	**Base**	**Battery**	**Color**	**Approvals**	**Language**
Ventis Slide-on Pump	18109162-				
Select options below in addition to base					
BATTERY					
Lithium-ion battery		1			
Extended range lithium-ion battery		2			
Alkaline battery		3			
COLOR					
Black			0		
Safety Orange			1		
APPROVALS					
UL/CSA				1	
ATEX / IECEx				2	
China EX				5	
GOST-EAC				7	
INMETRO				9	
LANGUAGE					
English, French, Spanish, German, Chinese					1
Italian, Polish, Czech, Portuguese, Russian					2

VTSB101
Lithium-ion Battery Kit

VTSB-201
Extended Range Lithium-ion Battery Kit

17151184-11
Extended Range Lithium-ion Battery Cover

17157329-0
Replacement Door

17154577-11
Alkaline Battery Kit

BATTERY

PART NO.	DESCRIPTION
VTSB-1XY	Lithium-ion battery kit
VTSB-2XY	Extended Range Lithium-ion Battery kit
17148313-Y	Extended Range Lithium-ion Battery
17151184-XY	Cover, Extended Range Lithium-ion
17154577-XY	Alkaline Battery Kit, VSP

PUMP ACCESSORIES

18109207-10	Urethane sample tubing kit 3.048 meters (10 feet)
17152395	Internal Dust Filter/Water Stop for Ventis Slide-on Pump
18109561	Internal Dust Filter/Water Stop for Ventis with Pump (Qty. 5)
17154853-5	Exhaust filter (5 pack)
17154581-5	Audible alarm filter (5 pack)
17157329-X	Replacement door, Ventis Pro/Ventis MX4 compatible
17129909	Replacement Inlet Cap

MX6 iBRID®
MULTI-GAS MONITOR

The MX6 iBrid® is the most adaptable six-gas monitor on the market. With hundreds of possible sensor combinations and a robust list of available configuration settings, the MX6 iBrid gas detector is ready to monitor oxygen, toxic and combustible gases, and volatile organic compounds (VOCs).

- Flexible sensor configurations monitor up to six gases simultaneously
- Prescreen entries for benzene with an optional convertible kit
- Optional integral sampling pump with strong 30.5 meter (100 feet) sample draw
- Full-color LCD for easy visibility in all lighting conditions

See all features and benefits at
www.indsci.com/mx6

SPECIFICATIONS*

WARRANTY Guaranteed For Life™ Program**

CASE MATERIAL Lexan/ABS/Stainless Steel with protective rubber overmold

DIMENSIONS
135 x 77 x 48 mm (5.3 x 3.05 x 1.9 in) without Pump
193 x 77 x 56 mm (7.6 x 3.1 x 2.2 in) with Pump

WEIGHT 409 g (14.4 oz) typical, without Pump; 511 g (18.0 oz) typical, with Pump

DISPLAY/READOUT Color Graphic Liquid Crystal Display

POWER SOURCE/RUN TIMES
Rechargeable, Extended-Range Lithium-ion Battery (36 hours) without Pump
Rechargeable, Extended-Range Lithium-ion Battery (20 hours) with Pump
Replaceable AA Alkaline Battery (10.5 hours) without Pump

TEMPERATURE RANGE: -20 °C to 55 °C (-4 °F to 131 °F)

HUMIDITY RANGE: 15% to 95% non-condensing (continuous)

MEASURING RANGES

SENSOR	RANGE	RESOLUTION
CATALYTIC BEAD		
Combustible Gas	0-100% LEL	1%
Methane (CH_4)	0-5% vol	0.01%
ELECTROCHEMICAL		
Ammonia (NH_3)	0-500 ppm	1
Carbon Monoxide (CO)	0-1,500 ppm	1
Carbon Monoxide (CO High Range)	0-9,999 ppm	1
Carbon Monoxide (CO/H_2 Low)	0-1,000 ppm	1
Chlorine (Cl_2)	0-50 ppm	0.1
Chlorine Dioxide (ClO_2)	0-1 ppm	0.01
Carbon Monoxide/ Hydrogen Sulfide (COSH)	CO: 0-1,500 ppm H_2S: 0-500 ppm	1 0.1
Hydrogen (H_2)	0-2,000 ppm	1
Hydrogen Chloride (HCl)	0-30 ppm	0.1
Hydrogen Cyanide (HCN)	0-30 ppm	0.1
Hydrogen Sulfide (H_2S)	0-500 ppm	0.1
Nitric Oxide (NO)	0-1,000 ppm	1
Nitrogen Dioxide (NO_2)	0-150 ppm	0.1
Oxygen (O_2)	0-30% vol	0.1%
Phosphine (PH_3)	0-5 ppm	0.01
Phosphine (PH_3 High Range)	0-1,000 ppm	1
Sulfur Dioxide (SO_2)	0-150 ppm	0.1
INFRARED		
Hydrocarbons	0-100% LEL	1%
Methane (CH_4 % vol)	0-100% vol	1%
Methane CH_4 % LEL)	0-100% LEL	1%
Carbon Dioxide (CO_2)	0-5% vol	0.01%
PHOTOIONIZATION		
VOC	0-2,000 ppm	0.1

CERTIFICATIONS: INGRESS PROTECTION IP64

ANZEx:	Ex ia s Zone 0 I; Ex ia s Zone 0 IIC T4
ATEX:	Ex ia IIC T4 Ga; II 1G (or Ex d ia IIC T4 Gb IR sensor); Ex ia I; Equipment Group and Category: I M1/II 1G
China CPC:	Metrology Approval
China Ex:	Ex ia d I/IIC T4
CMA:	Approval for Mining Products; CH_4, O_2, CO, CO_2
CSA:	Cl I, Gr A-D T4; Ex d ia IIC T4
EAC:	PBExiadI X; 1ExiadIICT4 X
IECEx:	Ex ia I (Ex ia d I IR sensor); Ex ia IIC T4 Ga; Ex d ia IIC T4 Gb
INMETRO:	Ex ia IIC T4 Ga
KC:	Ex d ia IIC T4
KIMM:	Ex d ia IIC T4
MDR:	Registration of Plant Design; CH_4, O_2, CO, H_2S, NO_2
MSHA:	30 CRF, Part 22, Intrinsically safe for methane/air mixtures
PA-DEP:	BFE 114-08 Permissible for PA Bituminous Underground Mines
UL:	Cl I, Div 1, Gr A-D, T4; Cl II, Groups F G; Cl I, Zone LEL 0, AEx ia d IIC T4 (or AEx ia d IIC T4 IR sensor)

SUPPLIED WITH MONITOR
Universal charger, nylon carrying case, belt clip, calibration cup, wrist strap, quick start guide, dust filter/water stop (with pump), sample tubing (with pump).

LANGUAGE OPTIONS
English, Portuguese, French, Indonesian, Spanish, Russian, German, Polish, Italian, Czech, Dutch

* These specifications are based on performance averages and may vary by instrument.
**Specific terms of the Guaranteed for Life™ Program are included with all products and are available upon request.

COMMON INSTRUMENT CONFIGURATIONS

PART NO.	DESCRIPTION
MX6-K1230201	MX6 iBrid LEL (Pentane), CO, H_2S, O_2, Ext. Li-ion
MX6-K123R211	MX6 iBrid with Pump, LEL (Pentane), CO, H_2S, O_2, PID, Ext. Li-ion
MX6-L1230211	MX6 iBrid with Pump, LEL (Methane), CO, H_2S, O_2, Ext. Li-ion
MX6-M103Q211	MX6 iBrid with Pump, (Methane), CO, O_2, CO_2 IR, Ext. Li-ion
MX6-MDH34211	MX6 iBrid with Pump, (Methane), NO, CO high range, O_2, NO_2, Ext. Li-ion
MX6-K1235211	MX6 iBrid with Pump, LEL (Pentane), CO, H_2S, O_2, SO_2, Ext. Li-ion,
MX6-KJ635201	MX6 iBrid LEL (Pentane), CO/H_2S, NH_3, O_2, SO_2, Ext. Li-ion
MX6-MH23Q201	MX6 iBrid (Methane), CO high range, H_2S, O_2, CO_2, Ext. Li-ion

COMMON INDUSTRY CONFIGURATIONS

MX6-KJ53R211	MX6 iBrid with Pump, LEL, CO/H_2S, O_2, SO_2, PID, Ext. Li-ion, Petroleum Refining
MX6-K103Q211	MX6 iBrid with Pump, LEL, CO, O_2, CO_2, Ext. Li-ion, Brewing/Bottling/Wineries
MX6-KJ835201	MX6 iBrid LEL, CO/H2S, O_2, SO_2, ClO_2, Ext. Li-ion Pulp/Paper
MX6-K673R211	MX6 iBrid with Pump, LEL, O_2, NH_3, Cl_2, PID, Ext. Li-ion, Hazmat
MX6-M1030501	MX6 iBrid CH_4 (%), CO, O_2, Ext. Li-ion (MSHA/AUS) Mining
MX6-M1D34501	MX6 iBrid CH_4 (%), CO, O_2, NO_2, NO, Ext. Li-ion (MSHA/AUS) Mining (Diesel Applications)

Confined Space Kit

Choice of MX6 iBrid monitor, universal charger, nylon carrying case, belt clip, calibration cup, wrist strap, maintenance tool, quick start guide, calibration tubing, dust filter/water stop (with pump), calibration fitting (with pump), sample tubing (with pump), calibration gas (appropriate mix) with regulator, spare replaceable cell alkaline battery, rugged Pelican® case.

MX6 iBRID MAINTENANCE

PART NO.	DESCRIPTION
18109329-ABC	DSX™ Docking Station for MX6 iBrid
-ABC	A – DSX Mode: 0 = DSX Standalone 1 = DSXi Cloud-connected 2 = DSX-L Local Server B – Number of Gas Inlet Ports: 3 = 3 Ports 6 = 6 Ports C – Power Cord Type: 1 = North America, 2 = EU, 3 = AUS, 4 = UK
18109406	DSXi Cloud-connected Activation Certificate
18105684	iGas® Reader
17109919	Fresh Air Filter
18107086	MX6 Datalink assembly, software included
17128489	MX6 Calibration Cup

MX6 iBRID CONFINED SPACE KITS

PART NO.	DESCRIPTION
MX6KIT-0000R211	MX6 iBrid Confined Space Kit with Pump, PID, Ext. Li-ion
MX6KIT-K1230211	MX6 iBrid Confined Space Kit with Pump, LEL, O_2, CO, H_2S
MX6KIT-K123R211	MX6 iBrid Confined Space Kit with Pump, LEL, O_2, CO, H_2S, PID

MX6 iBRID REPLACEMENT SENSORS

PART NO.	DESCRIPTION
17124975-1	Replacement sensor, Carbon Monoxide (CO)
17124975-2	Replacement sensor, Hydrogen Sulfide (H_2S)
17124975-3	Replacement sensor, Oxygen (O_2)
17124975-4	Replacement sensor, Nitrogen Dioxide (NO_2)
17124975-5	Replacement sensor, Sulfur Dioxide (SO_2)
17124975-6	Replacement sensor, Ammonia (NH_3)
17124975-7	Replacement sensor, Chlorine (CL_2)
17124975-8	Replacement sensor, Chlorine Dioxide (ClO_2)
17124975-9	Replacement sensor, Phosphine (PH_3) (Low)
17124975-A	Replacement sensor, Hydrogen Chloride (HCl)
17124975-B	Replacement sensor, Hydrogen Cyanide (HCN)
17124975-C	Replacement sensor, Hydrogen (H_2)
17124975-D	Replacement sensor, Nitric Oxide (NO)
17124975-E	Replacement sensor, Phosphine (PH_3) (high)
17124975-G	Replacement sensor, Carbon Monoxide (H_2 low)
17124975-H	Replacement sensor, Carbon Monoxide (high)
17124975-J	Replacement sensor, Carbon Monoxide/Hydrogen Sulfide (CO/H_2S)
17124975-K	Replacement sensor, %LEL (Pentane)
17124975-L	Replacement sensor, %LEL (Methane)
17124975-M	Replacement sensor, Methane (0-5% volume)
17124975-N	Replacement sensor, Methane IR (0-100% volume)
17124975-P	Replacement sensor, Hydrocarbons IR (0-100% LEL)
17124975-Q	Replacement sensor, Carbon Dioxide IR (0-5% volume)
17124975-R	Replacement sensor, PID (VOCs)
17124975-S	Replacement sensor, Methane (0-100% LEL)
17134701	Sensor Plug

MX6 iBRID ACCESSORIES

PART NO.	DESCRIPTION
17127762	Belt clip
17130964	MX6 Display cover with keypad
18106880-0	MX6 with pump hard leather carrying case
18106880-1	MX6 with pump hard leather case without display
18106831	Nylon carrying case, supplied with MX6 without pump
18106864	Nylon carrying case, supplied with MX6 with pump
17095746	MX6 Maintenance tool
17128737	Wrist strap

MX6 iBRID BATTERIES AND CHARGERS

PART NO.	DESCRIPTION
18106971	MX6 Replacement battery charger
18107094	MX6 Battery charger/Datalink, universal
18107011	MX6 Battery charger, 12V
18107136	MX6 Battery charger, 5-unit
18107243	MX6 Truck-mount charger, 12V
18107250	MX6 Truck-mount charger, (hard-wired)
17131038-2	Rechargeable Li-ion Ext. battery (UL/CSA/ATEX/ IECEx/INMETRO/GOST-R/KOSHA)
17131038-5	Rechargeable Li-ion Ext. battery (MSHA/AUS)
17131046-3	Alkaline battery (UL/CSA/ATEX/IECEx/INMETRO/ GOST-R/KOSHA)
17131046-6	Alkaline battery, MSHA/AUS

MX6 iBRID PUMP AND ACCESSORIES

PART NO.	DESCRIPTION
18106765	SP6 Motorized Sampling Pump Module
17058157	Internal Dust Filter/Water Stop
18109560	Internal Dust Filter/Water Stop (Pack of 5)
17129909	Replacement Inlet Cap
17155011	Calibration Tubing Assembly with T fitting*

*For use when calibrating a monitor with pump using a positive flow regulator

RADIUS® BZ1
AREA MONITOR

The Radius® BZ1 Area Monitor is a rugged area monitor that detects up to seven gases and connects your entire worksite. It can be deployed in seconds for emergency response scenarios and left in the field for up to seven days on a single charge. Radius BZ1 shares readings and alarms with other units and personal gas monitors through LENS Wireless, allowing you to create a dynamic safety network that changes with the needs of your operations.

- Detect up to seven gases simultaneously with 18 sensor options, including PID
- Know what's happening at a distance thanks to the largest display of any area monitor and customizable alarm action messages like "EVACUATE" or "VENTILATE"
- Cut through high-noise environments with alarms that sound at 108 dB
- DualSense® Technology increases worker safety by using two sensors to detect the same gas
- Extended Run Time Power Supply can extend battery run time to over one month, while Intrinsically Safe Extended Run Time Power Supply can provide indefinite run time in hazardous locations
- SafeCore® Module houses all critical technology out of the elements for fewer false alarms

See all features and benefits at
www.indsci.com/radius

SPECIFICATIONS*

WARRANTY
Two-year warranty, including sensors and battery

KEYPAD
Three buttons

DATA LOG
At least 3 months at 10-second intervals

EVENT LOGGING
60 alarm events

INGRESS PROTECTION
IP66

CASE MATERIAL
Impact-resistant polycarbonate alloys

DIMENSIONS
29 x 29 x 55 cm (11.5 x 11.5 x 21.5 in)

WEIGHT
7.5 kg (16.5 lb)

TEMPERATURE RANGE
-20 °C to 55 °C (-4 °F to 131 °F)

HUMIDITY RANGE
15% to 95% non-condensing (continuous)

DISPLAY/READOUT
11.2 cm (4.4 in) monochrome backlit graphical Liquid Crystal Display (LCD)

POWER SOURCE/RUN TIME
Rechargeable nickel-metal hydride (NiMH) battery
7 days (168 hours) typical @ 20 °C, without Pump, with Wireless
3.5 days (84 hours) typical @ 20 °C, with Pump, with Wireless
30 days (720 hours) typical @ 20 °C, electrochemical sensors only, without Pump, with Wireless
≤8 hour recharge time

ALARMS
108 decibel (dB) at 1 m (3.3 ft) redundant audible alarms
Redundant, visual alarm LEDs (red and blue)

SPECIFICATIONS*

SENSORS
Up to 6 sensors (catalytic bead, photoionization detector, electrochemical, IR, and PID)
Up to 7 simultaneous readings

MEASURING RANGES

CATALYTIC BEAD	
Combustible Gases:	0-100% LEL in 1% increments
ELECTROCHEMICAL	
Ammonia (NH_3):	0-500 ppm in 1 ppm increments
Carbon Monoxide (CO):	0-1,500 ppm in 1 ppm increments
Carbon Monoxide (CO High Range):	0-9,999 ppm in 1 ppm increments
Carbon Monoxide (CO/H_2 Low):	0-1,000 ppm in 1 ppm increments
Carbon Monoxide/Hydrogen Sulfide:	CO: 0-1,500 ppm in 1 ppm increments H_2S: 0-500 ppm in 0.1 ppm increments
Chlorine (Cl_2):	0-50 ppm in 0.1 ppm increments
Hydrogen (H_2):	0-2,000 ppm in 1 ppm increments
Hydrogen Sulfide (H_2S):	0-500 ppm in 0.1 ppm increments
Hydrogen Cyanide (HCN):	0-30 ppm in 0.1 ppm increments
Nitrogen Dioxide (NO_2):	0-150 ppm in 0.1 ppm increments
Oxygen (O_2):	0-30% vol in 0.1% increments
Sulfur Dioxide (SO_2):	0-150 ppm in 0.1 ppm increments
Phosphine (PH_3):	0-5 ppm in 0.01 ppm increments
Nitric Oxide (NO):	0-1000 ppm in 1 ppm increments
INFRARED	
Carbon Dioxide (CO_2):	0-5% vol in 0.01% increments
PHOTOIONIZATION	
Volatile Organic Compounds (10.6 eV):	0-2,000 ppm in 0.1 ppm increments

PUMP
Optional integral pump, up to 30.48 m (100 ft) sample draw

WIRELESS
Optional LENS Wireless, mesh network
Frequency: ISM license-free band (2.405 - 2.480 GHz)
Max Peers: 25 devices per network group
10 independent, configurable network groups; Range: 300 m (~1,000 ft) line of sight
Encryption: AES-128
Approvals: FCC Part 15, IC, CE/RED, others**

CERTIFICATIONS
INGRESS PROTECTION IP66

ATEX:	Ex da ia IIC T4 Ga, Equipment Group and Category II 1G
China EX:	Ex d ia IIC T1 Ga; Ex d ia IIC T4 Gb IR sensor
China CPC:	China CPC
CSA:	CI I, Div 1, G A-D, T4 C22.2 No. 152 applies only to %LEL thermo-catalytic reading
IECEx:	Ex da ia IIC T4 Ga
INMETRO:	Ex da ia IIC T4 Ga; Ex db ia IIC T4 Gb IR sensor
KC:	Ex d ia IIC T4
UL:	CI I, Div 1, Gr A-D, T4; CI 1 Zone 0 AEx da ia IIC T4 Ga1

SUPPLIED WITH MONITOR
Calibration cup (without pump), sample tubing and pump inlet water barrier (with pump), hand tool, charging power supply, and region-specific cord

LANGUAGE
English, French, Spanish, German

* These specifications are based on performance averages and may vary by instrument.
** See www.indsci.com/wireless-certifications for country-specific wireless approvals and certifications.
*** ISCA does not have certificate to verify

Build and price your Radius BZ1 online with the Instrument Builder
www.indsci.com/radius-builder

LENS® WIRELESS

The Radius BZ1 is available with optional LENS Wireless. With LENS Wireless, your instruments will connect seconds after being turned on—with no need for setup or additional infrastructure. You will instantly receive real-time gas readings from other connected instruments on the network, helping your team react faster in emergency situations.

SAFECORE®

With the Radius BZ1, all critical technology pieces such as sensors, software, pumps, and wireless, live inside the patent-pending SafeCore® Module. Smart sensors are positioned face down to prevent the elements from interfering with gas readings, resulting in fewer false alarms.

The module slides out from the Radius Base for easy docking and automated maintenance, ensuring that your sensors are always ready to provide accurate gas detection.

RADIUS® BZ1

The Radius Base is made of a durable, weather-resistant plastic. The base has built-in audio and visual alarms that grab workers' attention, even in high-noise environments. A large battery keeps the unit working as long as you do, and side-grip handles help make the base easy to move from location to location.

It is easier than ever to keep your area monitors running in the field. The SafeCore Module and Radius Base work together to provide maximum gas detection ability, while simplifying maintenance of your area monitors.

What Accessories Will You Need?

CHECKLIST

- ☐ Docking Stations
- ☐ Extra Modules or Bases
- ☐ Accessory Labels for Asset Management
- ☐ Probes
- ☐ Alarm Muffler
- ☐ Filters
- ☐ Sample Tubes
- ☐ Replacement Sensors
- ☐ Extended Run Time Power Supply
- ☐ Intrinsically Safe Extended Run Time Power Supply

For a list of all accessories, visit
The Radius BZ1 Product Page
www.indsci.com/radius

Extended Run Time Power Supply

COMMON INSTRUMENT CONFIGURATIONS

PART NO.	DESCRIPTION
BZ1-K123000x0y	Radius BZ1, LEL (Pentane), CO, H_2S, O_2
BZ1-K123000x1y	Radius BZ1, LEL (Pentane), CO, H_2S, O_2, Wireless
BZ1-K123001x0y	Radius BZ1, LEL (Pentane), CO, H_2S, O_2, with Pump
BZ1-K123001x1y	Radius BZ1, LEL (Pentane), CO, H_2S, O_2, Wireless, with Pump
BZ1-K123500x0y	Radius BZ1, LEL (Pentane), CO, H_2S, O_2, SO_2
BZ1-K123500x1y	Radius BZ1, LEL (Pentane), CO, H_2S, O_2, SO_2, Wireless
BZ1-K123501x0y	Radius BZ1, LEL (Pentane), CO, H_2S, O_2, SO_2, with Pump
BZ1-K123501x1y	Radius BZ1, LEL (Pentane), CO, H_2S, O_2, SO_2, Wireless, with Pump
BZ1-K1235R0x0y	Radius BZ1, LEL (Pentane), CO, H_2S, O_2, SO_2, PID
BZ1-K1235R0x1y	Radius BZ1, LEL (Pentane), CO, H_2S, O_2, SO_2, PID, Wireless
BZ1-K1235R1x0y	Radius BZ1, LEL (Pentane), CO, H_2S, O_2, SO_2, PID, with Pump
BZ1-K1235R1x1y	Radius BZ1, LEL (Pentane), CO, H_2S, O_2, SO_2, PID, Wireless, with Pump
SC-K123000x0y	SafeCore Module, LEL (Pentane), CO, H_2S, O_2
SC-K123000x1y	SafeCore Module, LEL (Pentane), CO, H_2S, O_2, Wireless
SC-K123001x0y	SafeCore Module, LEL (Pentane), CO, H_2S, O_2, with Pump
SC-K123001x1y	SafeCore Module, LEL (Pentane), CO, H_2S, O_2, Wireless, with Pump
SC-K123500x0y	SafeCore Module, LEL (Pentane), CO, H_2S, O_2, SO_2
SC-K123500x1y	SafeCore Module, LEL (Pentane), CO, H_2S, O_2, SO_2, Wireless
SC-K123501x0y	SafeCore Module, LEL (Pentane), CO, H_2S, O_2, SO_2, with Pump
SC-K123501x1y	SafeCore Module, LEL (Pentane), CO, H_2S, O_2, SO_2, Wireless, with Pump
SC-K1235R0x0y	SafeCore Module, LEL (Pentane), CO, H_2S, O_2, SO_2, PID
SC-K1235R0x1y	SafeCore Module, LEL (Pentane), CO, H_2S, O_2, SO_2, PID, Wireless
SC-K1235R1x0y	SafeCore Module, LEL (Pentane), CO, H_2S, O_2, SO_2, PID, with Pump
SC-K1235R1x1y	SafeCore Module, LEL (Pentane), CO, H_2S, O_2, SO_2, PID, Wireless, with Pump

x = Agency Certification: 1 = UL/CSA, 2 = ATEX/IECEx | y = Language: 1 = EN, 2 = FR, 3 = ES, 4 = DE

RADIUS BZ1 MAINTENANCE SOLUTIONS

PART NO.	DESCRIPTION
18109396-ABC -ABC	DSX™ Docking Station for SafeCore® A – DSX Mode: 0 = DSX Standalone 1 = DSXi Cloud-connected 2 = DSX-L Local Server B – Number of Gas Inlet Ports: 3 = 3 Ports 6 = 6 Ports C – Power Cord Type: 1 = North America, 2 = EU, 3 = AUS, 4 = UK
18109406	DSXi Cloud-connected Activation Certificate
17155915-A	Printed Manual: A = Language, where 1 = English, 2 = French, 3 = Spanish, 4 = German
18109498	Calibration Cup and Tubing Kit
17109919	Fresh air filter
17156983	Hand Tool

RADIUS BZ1 FILTERS AND CAPS

PART NO.	DESCRIPTION
17155932	Intrinsic Safety Power Port Dust Cap
18109444	Speaker Grill
18109445	Speaker Dust Filter (Pack of 2)
18109442	Alarm Muffler (Pack of 2)
17155934	Charging Port Dust Cap
18109455	Pump Inlet Water Barrier (Pack of 3)
18109447	Pump Bottom Dust Filter (Pack of 2)

RADIUS BZ1 ACCESSORIES

PART NO.	DESCRIPTION
18109431-AB	Radius BZ1 Base (Without SafeCore) A = Approvals: 1 = UL/CSA, 2=ATEX/IECEx B = Language: 1 = English, 2 = French, 3 = Spanish, 4 = German
17134701	Sensor Plug
18109455	Pump Inlet Water Barrier (Pack of 3)
18109447	Pump Bottom Dust Filter (Pack of 2)
18109448	Boot
17156465	Backup Battery
17155888	Sensor Collar
18109446	Module Cover
17156771	SafeCore Nameplate

RADIUS BZ1 CHARGERS AND POWER CORDS

PART NO.	DESCRIPTION
18109388-1A	Extended Run Time Power Supply A = Power Cord, where 1 = North America, 2 = Europe, 3 = Australia, 4 = UK
18109516	Intrinsically Safe Extended Run Time Power Supply (CSA)
17156261	50m Replacement Intrinsically Safe Cable
17155923	Charging Power Supply (Without Power Cord)
17155000	Power Cord (North America)
17155003	Power Cord (Europe)
17155001	Power Cord (Australia)
17155005	Power Cord (UK)

RADIUS BZ1 REPLACEMENT SENSORS

PART NO.	DESCRIPTION
17156650-1	Replacement Sensor, SafeCore, Carbon Monoxide (CO)
17156650-2	Replacement Sensor, SafeCore, Hydrogen Sulfide (H_2S)
17156650-3	Replacement Sensor, SafeCore, Oxygen (O_2)
17156650-4	Replacement Sensor, SafeCore, Nitrogen Dioxide (NO_2)
17156650-5	Replacement Sensor, SafeCore, Sulfur Dioxide (SO_2)
17156650-6	Replacement Sensor, SafeCore, Ammonia (NH_3)
17156650-7	Replacement Sensor, SafeCore, Chlorine (Cl_2)
17156650-B	Replacement Sensor, SafeCore, Hydrogen Cyanide (HCN)
17156650-C	Replacement Sensor, SafeCore, Hydrogen (H_2)
17156650-G	Replacement Sensor, SafeCore, Carbon Monoxide/ Hydrogen Low (CO/H_2 low)
17156650-H	Replacement Sensor, SafeCore, Carbon Monoxide (CO) High
17156650-J	Replacement Sensor, SafeCore, Carbon Monoxide/ Hydrogen Sulfide (CO/H_2S)
17156650-K	Replacement Sensor, SafeCore, LEL, Pentane
17156650-L	Replacement Sensor, SafeCore, LEL, CH_4
17156650-R	Replacement Sensor, SafeCore, PID (VOCs)
17156650-9	Replacement Sensor, SafeCore, Phosphine (PH_3)
17156650-D	Replacement Sensor, SafeCore, Nitric Oxide (NO)
17156650-Q	Replacement Sensor, SafeCore, Carbon Dioxide IR (CO_2)
18109472	DualSense Pack, SafeCore, Carbon Monoxide (CO)
18109473	DualSense Pack, SafeCore, Hydrogen Sulfide (H_2S)
18109474	DualSense Pack, SafeCore, Oxygen (O_2)
18109475	DualSense Pack, SafeCore, Nitrogen Dioxide (NO_2)
18109476	DualSense Pack, SafeCore, Sulfur Dioxide (SO_2)
18109486	DualSense Pack, SafeCore, Carbon Monoxide/Hydrogen Low (CO/H_2 low)
18109488	DualSense Pack, SafeCore, Carbon Monoxide/Hydrogen Sulfide (CO/H_2S)
18109489	DualSense Pack, SafeCore, LEL, Pentane
18109490	DualSense Pack, SafeCore, LEL, CH_4

TANGO® TX1
SINGLE GAS MONITOR

The Tango® TX1 is among the safest single gas detectors available today. Patented DualSense® Technology includes two of the same sensor for the most accurate reading and to ensure the monitor is functional and reliable, regardless of current bump test practices.

- Lightweight and wearable personal gas monitor
- Two-year run time
- Optional AlarmAmp™ increases audible alarms to 110dB
- Guaranteed for Life™ warranty

See all features and benefits at
www.indsci.com/tango

DualSense Technology

The Tango TX1, Ventis Pro5, Radius BZ1, and SafeCore Module incorporate revolutionary patented DualSense® Technology, which includes two of the same type of sensor to detect a single gas. The two sensor readings are processed through a proprietary algorithm and displayed as a single reading to the user. DualSense Technology ensures that regardless of your current bump test policy, you will be significantly safer than you would be using an instrument without redundant sensors*.

*Based on iNet data

SPECIFICATIONS*

INSTRUMENT WARRANTY
Guaranteed for Life™. Warranted for as long as the instrument is supported by Industrial Scientific Corporation (excludes sensors, batteries, and filters). CO and H_2S sensors are warranted for three years. All other sensors are warranted for two years.

DISPLAY: Segment Liquid Crystal Display (LCD)

KEYPAD: Two buttons

CASE MATERIALS
Case top: Polycarbonate with a protective rubber overmold
Case bottom: Conductive polycarbonate

ALARMS
Three strobe-emitting visual alarm LEDs (two red; one blue); 100 decibel (dB) audible alarm at a distance of 10 cm (3.94 in); Vibration alarm

DIMENSIONS: 99 x 51 x 35 mm (3.9 x 2.0 x 1.4 in)

WEIGHT: 126.0 g (4.4 oz)

TEMPERATURE RANGE: -40 °C to 50 °C (-40 °F to 122 °F) **

HUMIDITY RANGE: 15% to 95% non-condensing (continuous)

SENSORS
CO, CO/H_2 low, H_2S, NO_2, SO_2 – Electrochemical sensor technology

SENSOR MEASURING RANGES

Carbon Monoxide (CO):	0 to 1,000 ppm in 1 ppm increments
Carbon Monoxide (CO/H_2 low):	0 to 1,000 ppm in 1 ppm increments
Hydrogen Sulfide (H_2S):	0.0 to 500.0 ppm in 0.1 ppm increments
Nitrogen Dioxide (NO_2):	0.0 to 150.0 ppm in 0.1 ppm increments
Sulfur Dioxide (SO_2):	0.0 to 150.0 ppm in 0.1 ppm increments

BATTERY
3.6 V Primary lithium-thionyl chloride (Li-SOCl2); 1.5AH, 2/3AA; replaceable; non-rechargeable; always on; up to 2-year run time depending on operating conditions

DATA LOGGING: 3 months at 10-second intervals

EVENT LOGGING: 60 alarm events

CERTIFICATIONS
INGRESS PROTECTION IP66/67

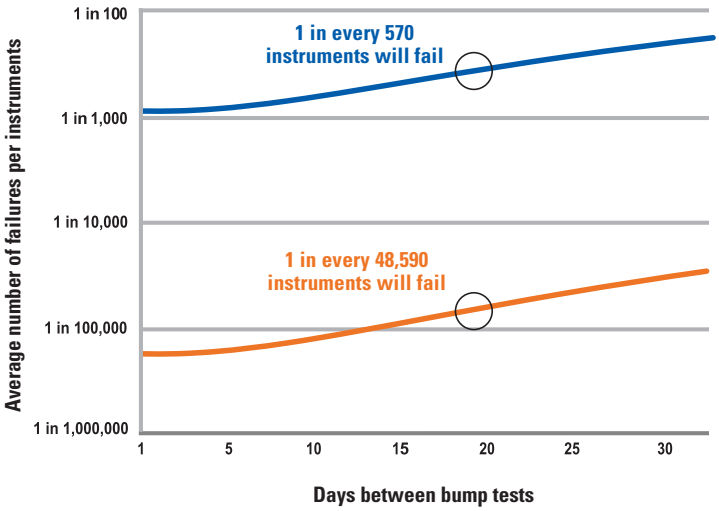
-40 °C to 50 °C (-40 °F to 122 °F)

ATEX:	Ex ia I Ma; Ex ia IIC T4 Ga; Equipment Group/Category: I M1/II 1G
CSA :	CI I, Gr A-D, T4; Ex ia IIC T4
IECEx:	Ex ia I Ma; Ex ia IIC T4 Ga
INMETRO:	Ex ia I Ma; Ex ia IIC T4 Ga
UL (C-US):	CI I, Gr A-D, T4; CI II, Gr E-G; CI I, Zone 0, AEx ia IIC T4

-20 °C to 50 °C (-4 °F to 122 °F)

China Ex:	Ex ia IIC T4 Ga
CMA:	Ex ia I Ma; H_2S, CO
EAC:	PO Ex ia I X; 0 Ex iX IIC T4 X
KC:	Ex ia IIC T4

* These specifications are based on performance averages and may vary by instrument.
** Operating temperatures above 50 °C (122 °F) may cause reduced instrument accuracy. Operating temperatures below -20 °C (-4 °F) may cause reduced instrument accuracy and affect display and alarm performance. See Product Manual for details.



COMMON INSTRUMENT CONFIGURATIONS

PART NO.	DESCRIPTION
TX1-1	Tango TX1, CO
TX1-2	Tango TX1, H_2S
TX1-4	Tango TX1, NO_2
TX1-5	Tango TX1, SO_2
TX1-G	Tango TX1, CO/H_2 low

TANGO TX1 MAINTENANCE SOLUTIONS

PART NO.	DESCRIPTION
18109330-ABC	DSX™ Docking Station for Tango® TX1
-ABC	A – DSX Mode: 0 = DSX Standalone 1 = DSXi Cloud-connected 2 = DSX-L Local Server B – Number of Gas Inlet Ports: 3 = 3 Ports C – Power Cord Type: 1 = North America, 2 = EU, 3 = AUS, 4 = UK
18109406	DSXi Cloud-connected Activation Certificate
18105684	iGas® Reader

TANGO TX1 NAMEPLATES

PART NO.	DESCRIPTION
17154916	Black nameplate
17154917	Green nameplate
17154918	Yellow nameplate
17154919	Blue nameplate
17154920	White nameplate

TANGO TX1 FILTERS

PART NO.	DESCRIPTION
18109613	Speaker dust barriers for Tango TX1, pack of 10
18109230	Water barrier kit, pack of 5

TANGO TX1 ACCESSORIES

PART NO.	DESCRIPTION
17154367	Replacement battery
17154484	Suspender clip
17154915-0	AlarmAmp, Black
17154915-1	AlarmAmp, Safety Orange
18109171	Soft nylon case, Black
18109239	Soft nylon case, Orange
18109238	CalCup and tubing kit

TANGO TX1 REPLACEMENT SENSORS

PART NO.	DESCRIPTION
17155161	Replacement sensor, Carbon Monoxide, pack of two
17155164	Replacement sensor, Hydrogen Sulfide, pack of two
17155162	Replacement sensor, Nitrogen Dioxide, pack of two
17155163	Replacement sensor, Sulfur Dioxide, pack of two
17155823	Replacement sensor, Carbon Monoxide/Low Hydrogen interference (CO/H_2 Low), pack of 2

GASBADGE® PRO
SINGLE GAS MONITOR

GasBadge® Pro is a single gas monitor built to Industrial Scientific's highest quality and reliability standards, providing a lifetime of gas hazard protection.

- Interchangeable sensors quickly adapt to monitor unsafe levels of oxygen or toxic gases
- Infrared interface
- Pair with GasBadge® Datalink to configure preferences and instantly download alarm events and instrument details
- Guaranteed for Life™ warranty

SPECIFICATIONS*

INSTRUMENT WARRANTY
Guaranteed for Life™: Instrument is warranted for as long as supported by Industrial Scientific Corporation (excluding sensors, batteries, and filters). CO, H_2S, and O_2 sensors are warranted for 2 years. All other sensors warranted for 1 year.

CASE
Rugged, water-resistant polycarbonate shell with protective concussion-proof overmold. RFI resistant.

DIMENSIONS
9.4 x 5.08 x 2.79 mm (3.7 x 2 x 1.1 in)

WEIGHT
85 g (3 oz)

SENSORS
CO, H_2S, O_2, NO_2, SO_2, NH_3, Cl_2, ClO_2, PH_3, HCN, H_2, CO/H_2 low

MEASURING RANGES

Carbon Monoxide (CO):	0-1,500 ppm in 1 ppm increments
Carbon Monoxide (CO/H_2 low):	0-1,500 ppm in 1 ppm increments
Hydrogen Sulfide (H_2S):	0-500 ppm in 0.1 ppm increments
Oxygen (O_2):	0-30% by volume in 0.1% increments
Nitrogen Dioxide (NO_2):	0-150 ppm in 0.1 ppm increments
Sulfur Dioxide (SO_2):	0-150 ppm in 0.1 ppm increments
Ammonia (NH_3):	0-500 ppm in 1 ppm increments
Chlorine (Cl_2):	0-100 ppm in 0.1 ppm increments
Chlorine Dioxide (ClO_2):	0-1 ppm in 0.01 ppm increments
Phosphine (PH_3):	0-10 ppm in 0.01 ppm increments
Hydrogen Cyanide (HCN):	0-30 ppm in 0.1 ppm increments
Hydrogen (H_2):	0-2,000 ppm in 1 ppm increments

DISPLAY
Custom LCD with graphical icons for easy use
Segmented display for direct gas readings
Backlight for low light conditions
"Go/No Go" display mode
Peak reading indication

ALARMS
User selectable low and high alarms
Ultra-bright LEDs, loud audible alarm (95 dB) and vibrating alarm

BATTERY RUN TIME
User replaceable 3V, CR2 Lithium battery, 2,600 hour run time, typical

DATA LOGGING
1 year continuous storage of data

EVENT LOGGER
Continually on. Logs last 15 alarm events, stamping how long ago the event occurred, the duration of the event, and the peak reading seen during the event
Event-logger can be viewed on PC or printed directly from the instrument to an infrared printer.

TEMPERATURE RANGE
-40 °C to 60 °C (-40 °F to 140 °F), typical

HUMIDITY RANGE
0% to 99% RH (non-condensing), typical

IP RATING
Third-party certified IP64

CERTIFICATIONS

ANZEx:	Ex ia I/IIC T4
ATEX:	Ex ia I/Ex ia IIC T4; Equipment Group/Category I M1/II 1G
China Ex:	Ex ia I/IIC T4
CMA:	Ex ia I
CSA:	CI I, Gr A-D, T4; Ex ia IIC T4
IECEx:	Ex ia I/IIC T4
INMETRO:	Ex ia IIC T4
KC:	Ex ia I/IIC T4
UL:	CI I, Div 1, Gr A-D, T4; CI II, Gr E-G

SUPPLIED WITH MONITOR
Attached suspender clip, calibration adapter and tubing

* These specifications are based on performance averages and may vary by instrument.

See all features and benefits at
www.indsci.com/gasbadgepro

Standard GasBadge Pro configurations are listed below. To order the Australian-approved version, add an "A" as a suffix to the part number.

COMMON INSTRUMENT CONFIGURATIONS

PART NO.	DESCRIPTION
18100060-1	GasBadge Pro – Carbon Monoxide (CO)
18100060-2	GasBadge Pro – Hydrogen Sulfide (H_2S)
18100060-3	GasBadge Pro – Oxygen (O_2)
18100060-4	GasBadge Pro – Nitrogen Dioxide (NO_2)
18100060-5	GasBadge Pro – Sulfur Dioxide (SO_2)
18100060-6	GasBadge Pro – Ammonia (NH_3)
18100060-7	GasBadge Pro – Chlorine (Cl_2)
18100060-8	GasBadge Pro – Chlorine Dioxide (ClO_2)
18100060-9	GasBadge Pro – Phosphine (PH_3)
18100060-B	GasBadge Pro – Hydrogen Cyanide (HCN)
18100060-C	GasBadge Pro – Hydrogen (H_2)
18100060-G	GasBadge Pro – Carbon Monoxide/Low Hydrogen Interference (CO/H_2 Low**)

GASBADGE PRO MAINTENANCE SOLUTIONS

PART NO.	DESCRIPTION
18109331-ABC -ABC	DSX™ Docking Station for GasBadge Pro A – DSX Mode: 0 = DSX Standalone 1 = DSXi Cloud-connected 2 = DSX-L Local Server B – Number of Gas Inlet Ports: 3 = 3 Ports C – Power Cord Type: 1 = North America, 2 = EU, 3 = AUS, 4 = UK
18109406	DSXi Cloud-connected Activation Certificate
18105684	iGas® Reader
18106260	GasBadge Datalink – Software included
17109919	Fresh air filter
17124033	GasBadge Pro Calibration Cup

GASBADGE PRO REPLACEMENT SENSORS

PART NO.	DESCRIPTION
17124983-1	Replacement sensor, Carbon Monoxide (CO)
17124983-2	Replacement sensor, Hydrogen Sulfide (H_2S)
17124983-3	Replacement sensor, Oxygen (O_2)
17124983-4	Replacement sensor, Nitrogen Dioxide (NO_2)
17124983-5	Replacement sensor, Sulfur Dioxide (SO_2)
17124983-6	Replacement sensor, Ammonia (NH_3)
17124983-7	Replacement sensor, Chlorine (Cl_2)
17124983-8	Replacement sensor, Chlorine Dioxide (ClO_2)
17124983-9	Replacement sensor, Phosphine (PH_3)
17124983-B	Replacement sensor, Hydrogen Cyanide (HCN)
17124983-C	Replacement sensor, Hydrogen
17124983-G*	Replacement sensor, Carbon Monoxide (H_2 Low**)

** Low Hydrogen Interference

GasBadge® Datalink

- Instantly download alarm events and instrument details
- Quickly and easily configure instrument preferences

Nylon Carrying Case

GASBADGE PRO ACCESSORIES

PART NO.	DESCRIPTION
17121963	GasBadge Neck Lanyard with Safety Release
18106484	GasBadge Pro Nylon Carrying Case
17124504	Replacement water/dust sensor barriers (5 count)
17123019	GasBadge Pro CR2 Lithium Battery, 3V
17120528	Suspender Clip

T40 RATTLER®
SINGLE GAS MONITOR

The T40 Rattler® is a low-cost, maintenance-free single gas monitor designed to alert workers to dangerous hydrogen sulfide or carbon monoxide concentrations.

- Compact size and light weight
- Vibrating, audio, and visual alarms
- Peak/hold feature shows highest reading during a shift
- 1,500 hour run time on one AA battery
- Two-year warranty from date of manufacture

See all features and benefits at
www.indsci.com/t40

SPECIFICATIONS*

INSTRUMENT WARRANTY
Two-year warranty from the date of shipment

CASE
High visibility, impact-resistant composite with radio frequency interference (RFI) protection

DIMENSIONS
86 x 58 x 19 mm (3.375 x 2.3 x .75 in)

WEIGHT
98 g (3.5 oz)

SENSORS
CO, H_2S – Electrochemical

MEASURING RANGES
Carbon Monoxide, 0-999 ppm in 1 ppm increments
Hydrogen Sulfide, 0-500 ppm in 1 ppm increments

ALARMS
Adjustable low and high alarm setpoints

POWER SOURCE (RUN TIME)
Replaceable "AA" alkaline battery (approx. 1,500 hours typical)

TEMPERATURE RANGE
-20 °C to 50 °C (-4 °F to 122 °F) typical

HUMIDITY RANGE
15% to 95% RH typical

CERTIFICATIONS
INGRESS PROTECTION IP66/67

-40 °C to 50 °C (-40 °F to 122 °F)

ATEX:	Ex ia I Ma; Ex ia IIC T4 Ga; Equipment Group/Category: I M1/II 1G
CSA :	Cl I, Gr A-D, T4; Ex ia IIC T4
IECEx:	Ex ia I Ma; Ex ia IIC T4 Ga
INMETRO:	Ex ia I Ma; Ex ia IIC T4 Ga
UL (C-US):	Cl I, Gr A-D, T4; Cl II, Gr E-G; Cl I, Zone 0, AEx ia IIC T4

-20 °C to 50 °C (-4 °F to 122 °F)

China Ex:	Ex ia IIC T4 Ga
CMA:	Ex ia I Ma; H_2S, CO
EAC:	PO Ex ia I X; 0 Ex iX IIC T4 X
KC:	Ex ia IIC T4

PART NO.	DESCRIPTION
18105247	T40 Rattler – Hydrogen Sulfide (H_2S)
18105254	T40 Rattler – Carbon Monoxide (CO)
18105874	T40 Nylon Carrying Case

All Rattler T40 Monitors Include: Battery (installed), additional battery, and maintenance tool.

DSX™ DOCKING STATION

The DSX™ Docking station is an automated gas detector maintenance, record storage, and fleet management solution that flexes with the needs of your business. Choose from DSX-L Local Server, DSXi Cloud-connected, or DSX Standalone based on your data access requirements. All DSX Docking Stations offer automatic charging, bump testing, and calibration.

- Email alerts and notifications provide information on worker exposure, instrument usage, and instrument service needs
- Print bump test and calibration certificates for hot work and confined space entry
- Auto detect calibration gas type and expiration date upon cylinder connection
- Calibration gas status indicators provide warning to order replacement gas before a cylinder is empty
- DSX Standalone requires no PC or network connection
- DSXi Cloud-connected provides cloud-based record storage with automatic file back-up, fleet management, and automated maintenance and notifications through iNet Control
- DSX-L Local Server provides server-based record storage, fleet management, and automated maintenance and custom data reporting

Where Do You Want Your Data?

Choose the out-of-the-box solution that best fits your needs.

DSX
Standalone

A simple out-of-the-box gas detector maintenance and record keeping station that requires no PC or network connection.

DSXi
Cloud-connected

Cloud-based record storage, fleet management, and automated maintenance and notification solution.

DSX-L
Local Server

Server-based record storage, fleet management, and automated maintenance and custom data reporting.

PHYSICAL SPECIFICATIONS

WARRANTY
Two-year warranty – DSX (Standalone) and DSX-L (Local Server)
Guaranteed For Life™ Program** – DSXi (Cloud-connected)

INSTRUMENTS SUPPORTED
GasBadge Pro, MX6 iBrid, Tango TX1, Ventis MX4, Ventis Pro5, SafeCore

DIMENSIONS
GasBadge Pro, Tango TX1: 22.7 x 16.9 x 27.3 cm (8.92 x 6.65 x 10.75 in)
Ventis MX4, Ventis Pro5: 24.9 x 16.9 x 27.3 cm (9.83 x 6.65 x 10.75 in)
MX6 iBrid: 25.3 x 16.9 x 27.3 cm (9.96 x 6.65 x 10.75 in)
SafeCore: 27.3 x 16.9 x 29.2 cm (10.75 x 6.65 x 11.5 in)

GAS INLETS
3-Port Version: One "fresh" air port, two calibration gas ports
6-Port Version: One "fresh" air port, five calibration gas ports (for Ventis, MX6 iBrid, and SafeCore only)

PUMP FLOW RATE
1.2 SCFH (550 mL/min)

COMMUNICATION
10 / 100 Ethernet support, RJ-45 Category 5 Connection

DISPLAY
128 x 64 Dot Matrix LCD – Multilingual modes
English, Spanish, French, German and Portuguese***

PERFORMANCE SPECIFICATIONS

OPERATING TEMPERATURE RANGE
0 °C to 50 °C / 32 °F to 122 °F

OPERATING HUMIDITY RANGE
0% to 80% relative humidity (RH) up to 30 °C (86 °F), decreasing linearly to 50% RH at 50 °C (122 °F)

EXTERNAL POWER SUPPLY RATINGS
Supply voltage: 100-240 VAC / 12 VDC
Frequency range: 50-60 Hz
Current rating: 5A

DSX Comparison Chart

	DSX Standalone	DSXi Cloud-connected	DSX-L Local Server
Record Storage	USB	Cloud	PC, Server
Bump and Cal	✓	✓	✓
Print Certificates	✓	✓	✓
6-Ports (Optional)	✓	✓	✓
Reports		✓	✓
Fleet Management		✓	✓
Event Scheduling		✓	✓
Email Alerts		✓	
Auto Software Updates		✓	
Auto Cal Gas Replenishment (Optional)		✓	
Price	$	$$	$$$
Software	Not Applicable	Included	Included

See all features and benefits at www.indsci.com/dsx

PART NO.	DESCRIPTION
INSTRUMENT CONFIGURATIONS	
18109327-ABC	Ventis® MX4, Ventis® Pro5
18109329-ABC	MX6 iBrid®
18109330-ABC	Tango® TX1
18109331-ABC	GasBadge® Pro
18109396-ABC	SafeCore® Module
-ABC	A – DSX Mode:
	0 = DSX Standalone
	1 = DSXi Cloud-connected
	2 = DSX-L Local Server
	B – Number of Gas Inlet Ports:
	3 = 3 Ports
	6 = 6 Ports (for Ventis, MX6 iBrid, & SafeCore only)
	C – Power Cord Type: 1 = North America, 2 = EU, 3 = AUS, 4 = UK

KITS*

18109400	DSX Standalone Kit: Tango TX1 (H_2S)
18109401	DSX Standalone Kit: Ventis MX4, Ventis Pro5 (LEL, CO, H_2S, O_2)
18109404	DSXi Cloud-connected Kit: Tango TX1 (H_2S)
18109405	DSXi Cloud-connected Kit: Ventis MX4, Ventis Pro5 (LEL, CO, H_2S, O_2)

ACCESSORIES

18109406	DSX to DSXi Activation Certificate
18105684	iGas® Reader
18105924	5-Port Gas Regulator Manifold Clamp
18109203	iNet Mobile Carrying Case – Carrying case designed to accommodate a DSX Docking Station, two 116 liter cylinders, regulator, and other accessories, allowing you to take your DSX on the go.
17113887	Ethernet Cable, 5 ft (Cat5E network cable)
17113895	Ethernet Cable, 10 ft (Cat5E network cable)
17113903	Ethernet Cable, 25 ft (Cat5E network cable)
17113945	5-Port Ethernet Hub
17109919	Fresh air filter

***DSX Docking Station Kits Include:** Choice of Standalone or Cloud-connected 3-port DSX Docking Station, 116L calibration gas (appropriate mix) with demand flow regulator with iGas® pressure switch, North American power cord, USB storage device (Standalone only).

**Specific terms of the Guaranteed for Life™ Program are included with all products and are available upon request.

***DSX-L (Local Server) does not support Portuguese.

Auto Replenishment

The calibration gas auto replenishment program is the most efficient way for customers to manage their calibration gas usage and needs. For those who elect to have the program as part of their iNet subscription, a new cylinder of gas will automatically be sent when iNet Control detects a low gas cylinder.

Calibration gas ensures that your gas detector is functioning properly and responding to gas exposures as expected. Gas detection equipment should be calibrated monthly to ensure the sensors in your gas detector are functioning properly. All Industrial Scientific calibration cylinders are manufactured to the highest quality standards and include NIST-traceable blend techniques, analytical leak testing of every cylinder, certified component concentrations, and clearly marked lot numbers and expiration dates. Replacement cylinders are available in a variety of sizes and concentrations for all gases detected by Industrial Scientific instruments.

				DEMAND FLOW REGULATORS	
PART NO.	DESCRIPTION	Vol	0.5LPM Regulator	Demand Flow	with iGas Pressure Switch
18105825	CYL, 200 ppm CO, 75 ppm H_2S, 15% O_2, 25% LEL Methane (For bump testing only)	11L	18100883	18102509	18105841
18109173	CYL, 18% O_2, 25% LEL Pentane	103L	18100883	18102509	18105841
18109174	CYL, 100 ppm CO, 18% O_2, 2.5% Methane	103L	18100883	18102509	18105841
18109187	CYL, 100 ppm CO, 18% O_2, 2.5% Methane	552L	18102260	18103549	18105833
18109199	CYL, 100 ppm CO, 18% O_2, 2.5% Methane	4,000L	n/a	18103556	18105858
18109165	CYL, 100 ppm CO, 18% O_2, 25% LEL Pentane	103L	18100883	18102509	18105841
18109161	CYL, 100 ppm CO, 18% O_2, 25% LEL Pentane	552L	18102260	18103549	18105833
18109156	CYL, 100 ppm CO, 25 ppm H_2S, 18% O_2, 2.5% Methane	58L	18100883	18102509	18105841
18109158	CYL, 100 ppm CO, 25 ppm H_2S, 18% O_2, 2.5% Methane	116L	18100883	18102509	18105841
18109160	CYL, 100 ppm CO, 25 ppm H_2S, 18% O_2, 2.5% Methane	650L	18103374	18103556	18105858
18109198	CYL, 100 ppm CO, 25 ppm H_2S, 18% O_2, 50% LEL Methane	4,000L	n/a	18103556	18105858
18109155	CYL, 100 ppm CO, 25 ppm H_2S, 18% O_2, 25% LEL Pentane	58L	18100883	18102509	18105841
18109157	CYL, 100 ppm CO, 25 ppm H_2S, 18% O_2, 25% LEL Pentane	116L	18100883	18102509	18105841
18109159	CYL, 100 ppm CO, 25 ppm H_2S, 18% O_2, 25% LEL Pentane	650L	18103374	18103556	18105858
18109194	CYL, 100 ppm CO, 25 ppm H_2S, 18% O_2, 25% LEL Pentane	4,000L	n/a	18103556	18105858
18109176	CYL, 100 ppm CO, 2.5% CO_2, 18% O_2, 25% LEL Pentane	103L	18100883	18102509	18105841
18109186	CYL, 100 ppm CO, 2.5% CO_2, 18% O_2, 25% LEL Pentane	552L	18102260	18103549	18105833
18109269	CYL, 250 ppm CO, 2.5% CO_2, 18% O_2, 50% LEL Methane	103L	18100883	18102509	18105841
18109251	CYL, 100 ppm CO, 25 ppm H_2S, 2.5% CO_2, 18% O_2, 2.0% (40% LEL) Methane	116L	18100883	18102509	18105841
18109363	CYL, 100 ppm CO, 25 ppm H_2S, 2.5% CO_2, 18% O_2, 2.0% (40% LEL) Methane	650L	18103374	18103556	18105858
18109250	CYL, 100 ppm CO, 25 ppm H_2S, 2.5% CO_2, 18% O_2, 25% LEL Pentane	116L	18100883	18102509	18105841
18109362	CYL, 100 ppm CO, 25 ppm H_2S, 2.5% CO_2, 18% O_2, 25% LEL Pentane	650L	18103374	18103556	18105858
18109236	CYL, 100 ppm CO, 5 ppm NO_2, 18% O_2, 25% LEL Pentane	116L	18100883	18102509	18105841
18109235	CYL, 100 ppm CO, 5 ppm NO_2, 18% O_2, 25% LEL Pentane	650L	n/a	n/a	18106740
18109184	CYL, 100 ppm CO, 5 ppm NO_2, 18% O_2, 2.5% Methane	58L	18100883	18102509	18105841
18109324	CYL, 5 ppm SO_2, 18% O_2, 2.5% Methane	116L	18100883	18102509	18105841

PART NO.	DESCRIPTION	Vol	0.5LPM Regulator	DEMAND FLOW REGULATORS Demand Flow	with iGas Pressure Switch
18102151	CYL, 25 ppm Ammonia (NH_3)	58L	18100883	18102509	18105841
18109081	CYL, 25ppm Ammonia (NH_3)	116L	18100883	18102509	18105841
18106658	CYL, 25 ppm Ammonia (NH_3)	650L	n/a	n/a	18106740
78103868	CYL, 50 ppm Ammonia (NH_3)	58L	18100883	18102509	18105841
18109106	CYL, 50 ppm Ammonia (NH_3)	116L	18100883	18102509	18105841
18109392	CYL, 50 ppm Ammonia (NH_3)	650L	n/a	n/a	18106740
18102913	CYL, 2.5% Carbon Dioxide (CO_2)	103L	18100883	18102509	18105841
18104208	CYL, 5.0% Carbon Dioxide (CO_2)	103L	18100883	18102509	18105841
18102163	CYL, 100 ppm Carbon Monoxide (CO)	103L	18100883	18102509	18105841
18103101	CYL, 100 ppm Carbon Monoxide (CO)	552L	18102260	18103549	18105833
18101758	CYL, 10 ppm Chlorine (Cl_2)	58L	18100883	18102509	18105841
18109082	CYL, 10 ppm Chlorine (Cl_2)	116L	18100883	18102509	18105841
18106955	CYL, 10 ppm Chlorine (Cl_2)	650L	18103374	18103556	18105858
18102996	CYL, 500 ppm Hydrogen (H_2)	103L	18100883	18102509	18105841
18102154	CYL, 10 ppm Hydrogen Chloride (HCl)	58L	18100883	18102509	18105841
18109088	CYL, 10 ppm Hydrogen Chloride (HCl)	116L	18100883	18102509	18105841
18106963	CYL, 10 ppm Hydrogen Chloride (HCl)	650L	18103374	18103556	18105858
18100859	CYL, 25 ppm Hydrogen Sulfide (H_2S)	58L	18100883	18102509	18105841
18109078	CYL, 25 ppm Hydrogen Sulfide (H_2S)	116L	18100883	18102509	18105841
18106633	CYL, 25 ppm Hydrogen Sulfide (H_2S)	650L	18103374	18103556	18105858
18109132	CYL, 25 ppm Hydrogen Sulfide (H_2S)	4,000L	n/a	18103556	18105858
18102152	CYL, 10 ppm Hydrogen Cyanide (HCN)	58L	18100883	18102509	18105841
18109085	CYL, 10 ppm Hydrogen Cyanide (HCN)	116L	18100883	18102509	18105841
18107839	CYL, 10 ppm Hydrogen Cyanide (HCN)	650L	n/a	n/a	18106740
18102939	CYL, 100 ppm Isobutylene	103L	18100883	18102509	18105841
18107375	CYL, 100 ppm Isobutylene	552L	18102260	18103549	18105833
18101378	CYL, 2.5% Methane (CH_4)	103L	18100883	18102509	18105841
18104778	CYL, 99% Methane (CH_4)	34L	18100883	18102509	18105841
18102153	CYL, 25 ppm Nitric Oxide (NO)	58L	18100883	18102509	18105841
18109091	CYL, 25 ppm Nitric Oxide (NO)	116L	18100883	18102509	18105841
18107722	CYL, 25 ppm Nitric Oxide (NO)	650L	n/a	n/a	18106740
18102219	CYL, 5 ppm Nitrogen Dioxide (NO_2)	58L	18100883	18102509	18105841
18109087	CYL, 5 ppm Nitrogen Dioxide (NO_2)	116L	18100883	18102509	18105841
18105882	CYL, 5 ppm Nitrogen Dioxide (NO_2)	650L	n/a	n/a	18106740
18101477	CYL, 25 ppm Nitrogen Dioxide (NO_2)	58L	18100883	18102509	18105841
18109084	CYL, 25 ppm Nitrogen Dioxide (NO_2)	116L	18100883	18102509	18105841
18107730	CYL, 25 ppm Nitrogen Dioxide (NO_2)	650L	n/a	n/a	18106740
18104059	CYL, 1.0 ppm Phosphine (PH_3)	58L	18100883	18102509	18105841
18102222	CYL, 5 ppm Sulfur Dioxide (SO_2)	58L	18100883	18102509	18105841
18109086	CYL, 5 ppm Sulfur Dioxide (SO_2)	116L	18100883	18102509	18105841
18108126	CYL, 5 ppm Sulfur Dioxide (SO_2)	650L	n/a	n/a	18106740
18101220	CYL, 10 ppm Sulfur Dioxide (SO_2)	58L	18100883	18102509	18105841
18109079	CYL, 10 ppm Sulfur Dioxide (SO_2)	116L	18100883	18102509	18105841
18105817	CYL, 10 ppm Sulfur Dioxide (SO_2)	650L	n/a	n/a	18106740
18109414	CYL, 10 ppm Sulfur Dioxide (SO_2)	4,000L	n/a	n/a	18106740
18101584	CYL, Zero Grade Air (20.9% Oxygen)	103L	18100883	18102509	18105841
18102320	CYL, Zero Grade Air (20.9% Oxygen)	552L	18102260	18103549	18105833
18109247	CYL, Zero Grade Air (20.9% Oxygen)	4,000L	n/a	18103549	18105833

NOTE: Calibration gas cylinder expiration times vary due to gas type. Please contact Industrial Scientific for detailed information.

Industrial Scientific Calibration Kits come equipped with everything you need to keep your gas monitoring devices operating accurately and reliably. Kits contain certified NIST-traceable (National Institute of Standards & Technology) span gases for safe, reliable instrument calibration. Complete kits are available for all installed sensors and include:

- Convenient carrying case
- Non-refillable cylinders
- Flow regulator

See all options at
www.indsci.com/cal-gas

PART NO.	DESCRIPTION	Vol
18102269	KIT, 100 ppm CO, 18% O_2, 25% LEL Pentane	103L
18102270	KIT, 100 ppm CO, 19% O_2, 2.5% Methane	103L
18109137	KIT, 100 ppm CO, 25 ppm H_2S, 18% O_2, 25% LEL Pentane	116L
18109139	KIT, 100 ppm CO, 25 ppm H_2S, 18% O_2, 25% LEL Pentane with Demand Flow Regulator	116L
18109138	KIT, 100 ppm CO, 25 ppm H_2S, 18% O_2, 2.5% Methane	116L
18103317	KIT, 100 ppm CO, 2.5% CO_2, 18% O_2, 25% LEL Pentane	103L
18102147	KIT, 25 ppm Ammonia (NH_3)	58L
18103275	KIT, 5.0% Carbon Dioxide (CO_2)	34L
18102162	KIT, 100 ppm Carbon Monoxide (CO)	103L
18101741	KIT, 10 ppm Chlorine (Cl_2)	58L
18102148	KIT, 10 ppm Hydrogen Chloride (HCl)	58L
18102149	KIT, 10 ppm Hydrogen Cyanide (HCN)	58L
18109135	KIT, 25 ppm Hydrogen Sulfide (H_2S)	116L
18101303	KIT, 2.5% Methane	34L
18102491	KIT, 99% Methane	34L
18102150	KIT, 25 ppm Nitric Oxide (NO)	58L
18102238	KIT, 5 ppm Nitrogen Dioxide (NO_2)	58L
18101469	KIT, 25 ppm Nitrogen Dioxide (NO_2)	58L
18101261	KIT, 25% LEL Pentane	34L
18102239	KIT, 5 ppm Sulfur Dioxide (SO_2)	58L
18101212	KIT, 10 ppm Sulfur Dioxide (SO_2)	58L

Automatic Calibration Gas Replenishment Program

By joining the Auto Replenishment Program, you ensure that you and your team are never without calibration gas and therefore never without a properly calibrated instrument. For those who register for the program, a new cylinder of gas will automatically be sent when iNet Control detects a low gas cylinder.

NOTE: Calibration gas cylinder expiration times vary due to gas type. Please contact Industrial Scientific for detailed information.

BUMP-N-GO™
BUMP TEST GAS

Bump testing gas detectors before each day's use is the only way to be sure that the sensors respond to gas. Bump-N-Go is a portable bump test cylinder that goes where the work is, so you can still bump test without access to a docking station or calibration gas.

- Bump test any time, anywhere with a pocket-sized gas cylinder
- Get 250 bumps out of one bottle, at a lower cost-per-bump, thanks to a pushbutton regulator that eliminates wasted gas
- Enjoy lower shipping costs with no hazardous material fees for ground shipments
- Convenient six-pack option saves time and money

See all features and benefits at
www.indsci.com/bump-n-go

SPECIFICATIONS

CYLINDER SHELF LIFE
1 year

CYLINDER HEIGHT
97.5 mm (3.84 in)

CYLINDER DIAMETER
48 mm (1.90 in)

CYLINDER WEIGHT
.204 kgs (0.45 lbs)

TEMPERATURE
Protect from sunlight and do not expose to temperatures exceeding 50 °C (122 °F)

CYLINDER STORAGE
Remove regulator prior to storage. Cylinders should be firmly secured to prevent falling or being knocked over. Store in a dry, well-ventilated area, away from sources of heat, ignition, and direct sunlight.

USE
Bump-N-Go Cylinders are for bump testing only. Do not use for calibration.

INDIVIDUAL CYLINDERS

PART NUMBER	DESCRIPTION
18109566	Bump-N-Go Cylinder, 100 ppm CO
18109567	Bump-N-Go Cylinder, 40 ppm H_2S
18109568	Bump-N-Go Cylinder, 100 ppm CO, 75 ppm H_2S, 15% O_2, 25% LEL (Methane)
18109597	Bump-N-Go Cylinder, 100 ppm CO, 75 ppm H_2S, 15% O_2, 50% LEL (Methane)

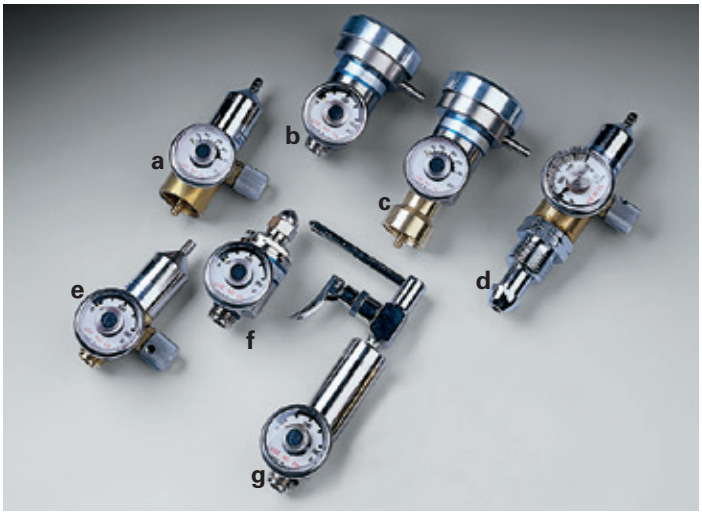
SIX-PACK CYLINDERS

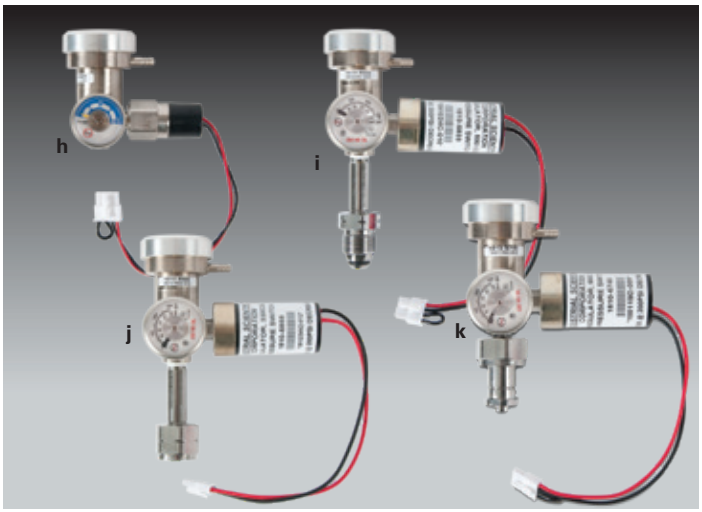
18109579	Bump-N-Go Cylinder, 6-pack, 100 ppm CO
18109578	Bump-N-Go Cylinder, 6-pack, 40 ppm H_2S
18109577	Bump-N-Go Cylinder, 6-pack, 100 ppm CO, 75 ppm H_2S, 15% O_2, 25% LEL (Methane)
18109598	Bump-N-Go Cylinder, 6-pack, 100 ppm CO, 75 ppm H_2S, 15% O_2, 50% LEL (Methane)

REGULATOR

18109565	Pushbutton regulator for use with Bump-N-Go Cylinders

Regulators provide the proper flow rate for calibrating your Industrial Scientific gas monitors. Always use the appropriate regulator for the application as recommended in the instruction manual.





(a) 18100933 - 34 L Regulator (1/2 L/min flow)
(b) 18102509 - 58/103 L Demand Flow Regulator
(c) 18103564 - 34 L Demand Flow Regulator
(d) 18102260 - 552 L Regulator (1/2 L/min flow)
(e) 18100883 - 58/103 L Regulator (1/2 L/min flow)
(f) 18102155 - 58/103 L Ammonia Regulator
(g) 18103580 - 58/103 L Bump Test Regulator

(h) 18105841 - 58/103/34L Demand Flow Regulator with iGas Pressure Switch
(i) 18105833 - 552L Demand Flow Regulator, 590 CGA with iGas Pressure Switch
(j) 18105858 - 650L Demand Flow Regulator, 330 CGA with iGas Pressure Switch
(k) 18106740 - Demand Flow Regulator, 660 CGA with iGas Pressure Switch

MX6 iBrid DSX Docking Station shown with a Demand Flow Regulator (18105841) and cylinder connected to an iGas® Reader (18105684).

(l) 18105924 - 5-port Clamp-on Gas Manifold

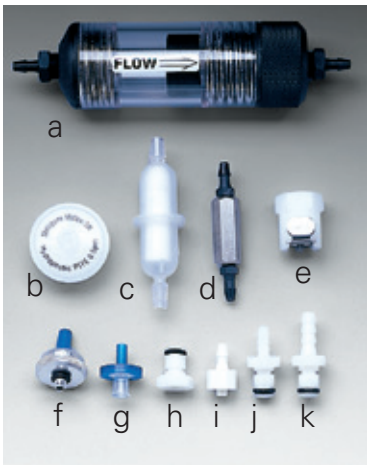
REGULATORS

PART NO.	DESCRIPTION
18100933	(a) 34L Regulator (1/2L/min flow)
18102509	(b) 58/103L Demand Flow Regulator (and 34L Aluminum Cylinders)
18103564	(c) 34L Demand Flow Regulator, CGA 600
18103549	552L Demand Flow Regulator, CGA 590
18103556	650L Demand Flow Regulator, CGA 330
18104158	Demand Flow Regulator, CGA 660
18106708	Demand Flow Regulator, CGA 705
18102260	(d) 552L Regulator (1/2 L/min flow), CGA 590
18100883	(e) 58/103L Regulator (and 34L Aluminum Cylinders) (1/2 L/min flow)
18102155	(f) 58/103L Ammonia Regulator (1 L/min flow)
18103580	(g) 58/103L Bump Test Regulator with Trigger
18103374	650L Regulator (1/2L/min flow), CGA 330
18104695	Regulator with Bump Test Trigger, CGA 330
18104356	Regulator with Bump Test Trigger, CGA 590
18105924	5-Port Clamp-on Gas Manifold

DEMAND FLOW REGULATORS

PART NO.	DESCRIPTION
18105841	(h) 58/103/34L Demand Flow Regulator with iGas 150 PSI Pressure Switch
18109244	(h) 58/103/34L Demand Flow Regulator with iGas 250 PSI Pressure Switch
18105866	34L Demand Flow Regulator, 600 CGA with iGas 150 PSI Pressure Switch
18109243	34L Demand Flow Regulator, 600 CGA with iGas 250 PSI Pressure Switch
18105833	(i) 552L Demand Flow Regulator, 590 CGA with iGas 200 PSI Pressure Switch
18109241	(i) 552L Demand Flow Regulator, 590 CGA with iGas 500 PSI Pressure Switch
18105858	(j) 650L Demand Flow Regulator, 330 CGA with iGas 200 PSI Pressure Switch
18109242	(j) 650L Demand Flow Regulator, 330 CGA with iGas 500 PSI Pressure Switch
18106740	(k) Demand Flow Regulator, 660 CGA with iGas 200 PSI Pressure Switch
18109246	(k) Demand Flow Regulator, 660 CGA with iGas 500 PSI Pressure Switch
18106757	Demand Flow Regulator, 705 CGA with iGas Pressure Switch
18101766	58/103L Regulator (1 L/min flow)

Remote sampling allows employees to assess air samples from an unknown and potentially toxic or combustible atmosphere using a pumped gas monitor before they enter the area. Adequate air flow is critical for proper remote sampling. All filters should be replaced when dirt or water inhibits air flow. Quick disconnect fittings allow easy connection to secure tubing to sampling pumps.



Additional Remote Sampling Equipment:

(a) Inline High Capacity Water Stop
(b) Dust Filter/WaterStop for Docking Station Fresh Air Inlet
(c) Inline Dust Filter for iSP/ SP402/SP202/SP100 Pumps
(d) Dilution Tube
(e) Quick Disconnect Fitting, Female
(f) Replacement Filters (Package of 5)
(g) Internal Dust Filter/WaterStop for MX6/ATX Series
(h) Quick Disconnect Fitting, Male, Threaded
(i) Luer Fitting, Male, 1/8 in or 3/16 in Barb
(j) Quick Disconnect Fitting, Male, 1/8 in Barb
(k) Quick Disconnect Fitting, Male, 3/16 in Barb

l

m

(l) 17037961 – Carrying Case for 2 Cylinders (58 L)

(m) 17124348 – Wall/Desk Mount Cylinder Holder for use with 34, 58, 116, and 552 liter cylinders (cylinder not included)

ADDITIONAL REMOTE SAMPLING EQUIPMENT

PART NO.	DESCRIPTION
18102277	(a) Inline High Capacity Water Stop
17057803	Replacement Gortex Filter Insert for 18102277
17027152	(b) White Disc Filter
18109558	(b) White Disc Filter (pack of 10)
17050908	(c) Inline Dust Filter 10 micron, with adaptors for MX6 iBrid Ventis, VSP pumps
17041740	(d) Dilution Tube (for use with Sampling Pumps)
17050688	(e) Quick Disconnect Fitting, Female
17024597	(f) Replacement Filter for 6' Extendible Probe
18109559	(f) Replacement Filters for 6' Extendible Probe (Pack of 5)
17058157	(g) Internal Dust Filter/ WaterStop for MX6 iBrid
17051611	(h) Quick Disconnect Fitting, Male, Threaded
17048273	(i) Luer Fitting, Male, 3.175 mm (1/8 in) Barb
17050698	(i) Luer Fitting Male, 4.7625 mm (3/16 in) Barb
17050689	(j) Quick Disconnect Fitting, Male, 3.175 mm (1/8 in) Barb
17050775	(k) Quick Disconnect Fitting, Male, 4.7625 mm (3/16 in) Barb
17051319	Dust Filter/WaterStop for Docking Station Fresh Air Inlet
17051701	Replacement Probe Fitting for 18101386
17136540	SP6 Filter Cap (used with 18105155-X)
17152395	Internal Dust Filter/Water Stop for Ventis Slide-on Pump
17068099	3/16'' To 1/8'' Reducer
17129909	MX6 iBrid/Ventis Filter cap

PROBE TUBING KITS – for use with 18101386 probe

18108043	Probe Tubing Kit for MX6 iBrid/Ventis – Urethane (Not for use with Cl_2, ClO_2, HCl, or PID sensors)
18108093	Probe Tubing Kit for MX6 iBrid/Ventis – Teflon lined (For use with all sensors)

UNIVERSAL URETHANE SAMPLE TUBING KIT WITH DUST FILTER/WATER STOP

PART NO.	LENGTH	PART NO.	LENGTH
18109207-10	3 m/10 ft	18109207-60	18.3 m/60 ft
18109207-20	6.1 m/20 ft	18109207-70	21.3 m/70 ft
18109207-30	9.1 m/30 ft	18109207-80	24.4 m/80 ft
18109207-40	12.2 m/40 ft	18109207-90	27.4 m/90 ft
18109207-50	15.2 m/50 ft	18109207-100	30.5 m/100 ft

NOTE: Not for use with Cl_2, ClO_2, HCl, or PID Sensors

UNIVERSAL TEFLON LINED SAMPLE TUBING KIT WITH DUST FILTER/WATER STOP

PART NO.	LENGTH	PART NO.	LENGTH
18109206-10	3 m / 10 ft	18109206-60	18.3 m / 60 ft
18109206-20	6.1 m / 20 ft	18109206-70	21.3 m / 70 ft
18109206-30	9.1 m / 30 ft	18109206-80	24.4 m / 80 ft
18109206-40	12.2 m / 40 ft	18109206-90	27.4 m / 90 ft
18109206-50	15.2 m / 50 ft	18109206-100	30.5 m / 100 ft

NOTE: For use with all sensors

MISCELLANEOUS CALIBRATION EQUIPMENT

PART NO.	DESCRIPTION
18105684	iGas® Reader
17041807	Calibration Log, (tablet of 50 sheets)
17045873	Calibration Label
17037961	(l) Carrying Case for 2 Cylinders (58/103 L)
18100149	Carrying Case for 2 Cylinders (34 L) with 0.5 LPM Regulator
17154096	Carry Case for 2 Cylinder (116L)
17124348	(m) Wall/Desk Mount Cylinder Holder
17113275	Cylinder Recycling Tool (58L, 103L steel)
17113283	Cylinder Recycling Tool (34L)

SAMPLING PROBES

PART NO.	DESCRIPTION
18101428	(a) 4 ft Polycarbonate Probe with Tubing
18101386	(b) 6 ft Extendible Stainless Steel Probe
17024597	Replacement Filter Single
17024191	Replacement Filter Pack of 5
18102309	(c) 1.5 ft Polycarbonate Probe with Filter
18102246	(d) 3 ft Extendible Probe with Teflon Tubing Insert
18102306	3 ft Stainless Steel Bar Hole Probe with Filter
17058157	Replacement Filter Single
18109560	Replacement Filter Pack of 5
18102276	5 ft Stainless Steel Flue Gas Probe with Filter (to 1,500 °F)
17058157	Replacement Filter Single
18109560	Replacement Filter Pack of 5
18103309	Aluminum Coiled Probe (800-900 °F)
18104299	3 ft Polycarbonate Probe with High Capacity Filter
18102277	Inline High Capacity Water Stop
17057803	Inline High Capacity Water Stop filter

(a) 18101428
4 ft Polycarbonate Probe with Tubing

(b) 18101386 6 ft Extendible Stainless Steel Probe
Shown: partially extended

(c) 18102309
1.5 ft Polycarbonate Probe with Filter

MX6 iBRID INLET PROBE ADAPTERS

PART NO.	DESCRIPTION
18108850-1	Filter Cap, 1/8 Hose Barb Fitting
18108850-2	Filter Cap, Quick Connect Fitting
18108850-3	Filter Cap, 8 in Teflon Probe
18108850-4	Filter Cap, 10 in Stainless Steel Probe
18108850-5	Filter Cap, 18 in Polycarbonate Probe

(d) 18102246
3 ft Extendible Probe with Teflon Tubing Insert
Shown: not extended

MX6 iBRID BENZENE TUBE

PART NO.	DESCRIPTION
18109605	Benzene Tube Holder, Quick Connect, MX6
18109602	Benzene Tube Holder, Threaded Connect, MX6
17158960	Benzene Pre-Filter Tubes (Box of 10)
17185961	Benzene Pre-Filter Tube Tip Breaker

18109602
Benzene Tube Holder, Thread Connected

18109605
Benzene Tube Holder, Quick Connect

17158960
Benzene Pre-Filter Tubes (Box of 10)

17185961
Benzene Pre-Filter Tube Tip Breaker

Start-up and Commissioning Services

Industrial Scientific can install your systems, ensure they work properly, and train your employees. Contact us or your local distributor for a customized program and quote that works for your employees, resources, and budget.

Maintenance and Repair

To ensure your instruments remain at their highest-quality performance, we provide preventative maintenance and repair through mobile service programs and regional service centers.

If your instrument needs repair, visit
www.indsci.com/repair

Warranty

Industrial Scientific designs and manufactures the highest quality instruments to preserve life and property. Industrial Scientific warrants our monitors to be free from defects in material and workmanship under normal and proper use and service (consumable items excluded). Contact Industrial Scientific for additional warranty information, including warranty duration for each specific instrument. Warranty registration ensures valid warranty coverage.

Register your products at
www.indsci.com/gas-detectors/warranty

Extended Warranty

Extended warranty programs provide additional coverage after the initial product warranty expires. The extended warranty is all-inclusive and designed to provide consistent maintenance costs for the length of the program.

PART NO.	DESCRIPTION
Extended Warranty Programs for the MX6 Multi-Gas Monitor Requires purchase at the time of the sale.	
1800-MX6-EXW	2 Year Extended Warranty, MX6 all sensor options except PID sensor*; This plan does not cover the SP6 sampling pump or the PID sensor.
1800-MX6-EXWA	2 Year Extended Warranty, MX6 with sampling pump and all sensor options except PID sensor; This plan does not cover the PID sensor.
1800-MX6-EXWPA	2 Year Extended Warranty, MX6 all sensor options including PID and sampling pump; This plan covers all sensor options and the SP6 sampling pump.

Extended Warranty Program for the MX4 Ventis
Requires purchase within the first six months of instrument ownership.

1800-VTS-EXW1	1 Year Extended Warranty, Ventis without Pump
1800-VTS-EXWA1	1 Year Extended Warranty, Ventis with Pump
1800-VTS-EXW2	2 Year Extended Warranty, Ventis without Pump
1800-VTS-EXWA2	2 Year Extended Warranty, Ventis with Pump
18008631-EXW	2 Year Extended Warranty, Single-Unit V-Cal, Ventis
18007664-EXW	2 Year Extended Warranty, 6-Unit V-Cal, Ventis

Extended Warranty Program for the GasBadge Pro Monitor
Requires purchase at the time of the sale.

18000060-EXW	2 Year Extended Warranty, GasBadge Pro all sensors

GDME
GAS DETECTION MADE EASY TRAINING

Training Services

Gas Detection Made Easy seminars are presented monthly by Industrial Scientific's experienced training department in a hands-on learning environment. Customer-site training is also available to meet your corporate needs for gas hazard education, confined space awareness, and instrument training. Product training videos for users and supervisors are also available in various formats for instrument operation, calibration, and maintenance.

Industrial Scientific is committed to educating workers on the proper use of gas detection equipment and services while empowering them to enhance their culture of safety. We offer a variety of solutions to meet your training needs.

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Gas Detection 103 – How to Service and Repair Gas Detectors
iNet Control Training
On-site Custom Courses
T3 – Train the Trainer

Products Covered by Our Online Video Training

GasBadge Pro
Ventis MX4
MX6 iBrid
iNet Control
Tango TX1
Ventis Pro5
Radius BZ1
DSX Docking Station

PART NO.	DESCRIPTION
17046848	Confined Space Booklet (English)
16000029	Gas Detection Made Easy (Class Book)

Download the Gas Detection Made Easy App

Learn about hazardous gas types, detection methods, sensor technologies, regulations, and more.

GET IT ON Google play

Available on the App Store

Below are some frequently-used terms and important information related to gas detection. If you have further questions about gas monitoring or safety, call 1-412-788-4353 or visit www.indsci.com. There's never a charge for a question.

Glossary of Occupational Safety and Health Terms

dB: Decibel – A unit used to measure the relative power of sound. A 3 dB increase in sound output power represents a doubling of the perceptible volume.

eV: Electron Volt – A measurement of energy equal to the amount of energy it takes to move 1 electron through 1 volt of potential.

IDLH: Immediately Dangerous to Life and Health – The maximum concentration of gas (in ppm) from which a worker could escape within 30 minutes without experiencing any escape-impairing or irreversible health effects.

LEL/LFL: Lower Explosive Limit/Lower Flammable Limit – The minimum concentration at which a gas will explode. A common unit of measurement is a percent of the LEL.

mA: Milliamp – A unit of electric current expressed in amperes. 4-20 mA signals are commonly used analog signals in industrial electronics, where 4 represents the lowest value, for instance 0 ppm, and 20 represents the maximum, for instance, 999 ppm.

PEL: Permissible Exposure Limit – Level of gas (in ppm) a worker can be exposed to 8 hours a day/40 hours a week for the rest of their life with no long term health effects.

PID: Photoionization Detector – An instrument that utilizes ultra-violet light energy to ionize and detect the presence of an unknown gas or vapor.

ppm: Part Per Million – A common unit of measurement for toxic gases. This term literally means one part out of one million possible parts.

TLV-STEL: Short-Term Exposure Limit – The average amount of gas (in ppm) a worker can be exposed to in a 15 minute period with no long-term health effects. This may occur 4 times a shift with one hour between 15 minute exposures.

TLV-TWA: Time-Weighted Average – The average amount of gas (in ppm) a worker can be exposed to over a certain time period. This time is defined as 8 hours to represent a normal work day.

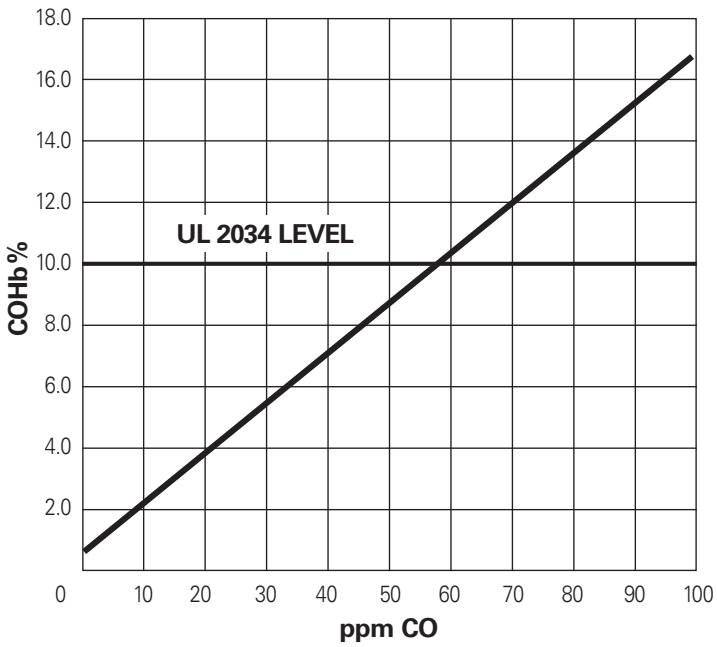
TLV: Threshold Limit Value – A term used to signify limits in gas exposure. TLV is used as a prefix for TWA and STEL.

UEL/UFL: Upper Explosive Limit/Upper Flammable Limit – The maximum concentration at which a gas will explode.

VAC: Volts Alternating Current – An electric current that reverses direction at regular intervals.

VDC: Volts Direct Current – An electric current of constant direction.

VOC: Volatile Organic Compound – Any compound containing carbon, except methane, that can be readily vaporized.



The carboxyhemoglobin level is a measure of the amount of Carbon Monoxide which has been absorbed into the blood stream. The chart converts the amount of Carbon Monoxide measured in the exhaled breath to the percentage carboxyhemoglobin level in the blood. The UL 2034 level (10% carboxyhemoglobin) depicted on the chart shows the average carboxyhemoglobin concentration after a fifteen minute exposure to 400 ppm Carbon Monoxide. At this exposure level, the average person will begin to experience the symptoms of Carbon Monoxide poisoning.

Weight of Various Gases Compared to Air

The following gases are lighter than air:

Acetylene	Ammonia
Carbon Monoxide	Ethylene
Hydrogen	Hydrogen Cyanide
Methane	

The following gases are heavier than air:

Argon	Butane
Carbon Dioxide	Chlorine
Ethane	Hexane
Hydrogen Chloride	Hydrogen Sulfide
Methyl Ethyl Ketone	Methyl Mercaptan
Nitrogen Dioxide	Nitrous Oxide
Oxygen	Phosphine
Sulfur Dioxide	Propane

Fire Triangle

Intrinsic Safety

What is intrinsic safety?

Intrinsic safety is a design technique applied to electrical equipment and wiring for hazardous locations. The technique is based on limiting energy, electrical and thermal, to a level below that required to ignite a specific hazardous atmospheric mixture.

How is intrinsic safety defined?

Intrinsically safe equipment and wiring shall not be capable of releasing sufficient electrical or thermal energy under normal or abnormal conditions to cause ignition of a flammable or combustible atmospheric mixture in its most easily ignitable concentration.

Who verifies intrinsic safety?

Equipment is tested and certified for intrinsic safety by independent third party agencies, such as Underwriters Laboratories (UL), Canadian Standards Association (CSA), Factory Mutual Research Corporation (FM) and the Mine Safety and Health Administration (MSHA). Independent testing ensures that your gas monitoring equipment is not only designed to be intrinsically safe, but meets all required standards for intrinsic safety.

Ref: R. Stahl – Intrinsic Safety Primer ©1988

National Electrical Code Article 504-2
Definition of a Intrinsically Safe Circuit © 1996

A circuit in which any spark or thermal effect is incapable of causing ignition of a flammable or combustible material in air under prescribed test conditions.

LEL Correlation Factors Chart

The following chart outlines LEL correlation factors for combustible gas sensors.

GAS BEING SAMPLED	CALIBRATION GAS						
	LEL (% vol)	Butane	Hexane	* Hydrogen	* Methane	* Pentane	* Propane
Acetone	2.5%	1.06	0.70	1.70	1.70	0.90	1.10
Acetylene	2.5%	0.74	0.60	1.30	1.30	0.70	0.80
Benzene	1.2%	1.16	0.80	1.90	1.90	1.00	1.20
Butane	1.8%	1.00	0.55	1.69	1.58	0.79	0.98
Ethane	3.0%	0.84	0.60	1.30	1.30	0.70	0.80
Ethanol	3.3%	0.94	0.52	1.59	1.49	0.74	0.92
Ethylene	2.7%	0.84	0.60	1.40	1.30	0.70	0.90
Hexane	1.1%	1.81	1.00	3.04	2.86	1.42	1.77
Hydrogen	4.0%	0.59	0.33	1.00	0.94	0.47	0.58
Isopropanol	2.0%	1.16	0.90	2.00	1.90	1.00	1.20
Methane	5.0%	0.63	0.35	1.06	1.00	0.50	0.62
Methanol	6.0%	0.63	0.50	1.10	1.10	0.60	0.70
Nonane	0.8%	2.34	1.30	3.95	3.71	1.84	2.29
Pentane	1.4%	1.28	0.71	2.15	2.02	1.00	1.25
Propane	2.1%	1.02	0.57	1.72	1.62	0.80	1.00
Styrene	0.9%	1.30	1.00	2.20	2.20	1.10	1.40
Toluene	1.1%	1.62	0.89	2.71	2.55	1.26	1.57
Xylene	1.1%	1.58	1.10	2.60	2.50	1.30	1.60
JP-4	—	—	—	—	—	1.20	—
JP-5	—	—	—	—	—	0.90	—
JP-8	—	—	—	—	—	1.50	—

Accuracy +/- 25% error

NOTE: Calibration gases available from Industrial Scientific Corporation

1. The correlation factors in the table are averaged results for estimation use only. It's not recommended for analytical application with high accuracy expectation.
2. The correlation factors may vary from sensor to sensor with tolerance of +/- 25% for new sensors. The number could further shift for old sensors.
3. To get a more accurate result, it's recommended to calibrate the instrument with a gas that has CF close to 1. The closer, the better.
4. It's not recommended to use correlation factors if the target gas is methane and the sensor is old.
5. Expect more deviation when an old sensor is calibrated with methane gas.

* Preferred gases

Lower Explosive Limits of Combustible Gases

The following are the lower explosive limits of selected gases:

Acetone	2.5% of volume	Hydrogen	4.0% of volume
Acetylene	2.5% of volume	Isopropyl Alcohol (Isopropanol)	2.0% of volume
Benzene	1.2% of volume	Methane	5.0% of volume
Butane	1.9% of volume	Methyl Alcohol (Methanol)	6.0% of volume
Butyl Alcohol (Butanol)	1.4% of volume	Methyl Ethyl Ketone	1.4% of volume
Diethyl Ether	1.9% of volume	n-Pentane	1.4% of volume
Ethane	3.0% of volume	Propane	2.1% of volume
Ethyl Alcohol (Ethanol)	3.3% of volume	Propylene	2.0% of volume
Ethylene	2.7% of volume	Styrene	0.9% of volume
Ethylene Oxide	2.7% of volume	Toluene	1.1% of volume
Hexane	1.1% of volume	Xylene	1.1% of volume

Electrochemical Sensor Cross Interference Table

GAS \ SENSOR	Carbon Monoxide	Carbon Monoxide/ Hydrogen Low	Hydrogen Sulfide (Ventis)	Hydrogen Sulfide (TX1, MX6)	Sulfur Dioxide	Nitrogen Dioxide	Chlorine	Chlorine Dioxide	Hydrogen Cyanide	Hydrogen Chloride	Phosphine	Nitric Oxide	Hydrogen	Ammonia
Carbon Monoxide	100	100	1	1	1	0	0	0	0	0	0	0	20	0
Hydrogen Sulfide	5	5	100	100	1	-40	-3	-25	10	300	25	10	20	25
Sulfur Dioxide	0	5	5	5	100	0	0	-5	10	40	-1	0	0	-40
Nitrogen Dioxide	-5	5	-25	-25	-165	100	45	50	-70	—	-11	30	0	-10
Chlorine	-10	0	-20	-20	-25	10	100	60	-20	6	-20	0	0	-50
Chlorine Dioxide	—	—	—	—	—	—	20	100	—	—	—	—	—	—
Hydrogen Cyanide	15	5	-1	-5	50	1	0	0	100	35	4	0	30	5
Hydrogen Chloride	3	—	0	0	5	0	2	0	0	100	0	15	0	0
Phosphine	80	415	60	55	20	-130	-225	-100	425	300	100	10	-30	15
Nitric Oxide	25	40	1	-0.2	1	5	10	—	-5	—	-1	100	30	0
Hydrogen	22	3	0.3	0.08	0.5	0	0	0	0	0	0	0	100	0
Ammonia	0	0	0	0	0	0	0	0	0	0	0	0	0	100
Acetylene	202	177	0	0	138	0	—	—	—	8	—	—	—	—
Ethylene	77* (100)	55*	0	0	—	—	—	—	—	—	—	—	—	—
Ethanol	0* (50)	0* (65)	0	0	—	—	—	—	—	—	—	—	—	—
Methyl Mercaptan	—	—	—	77	—	—	—	—	—	—	—	—	—	—
Ethyl Mercaptan	—	—	—	34	—	—	—	—	—	—	—	—	—	—

*new sensor () aged sensor or saturated filter — No data available

NOTES: The table above reflects the percentage response provided by the sensor listed across the top of the chart when exposed to a known concentration of the target gas listed in the left hand column.

The specified cross interference numbers apply to new sensors only and may vary with time. They also vary from sensor to sensor.

The numbers are measured under environment of 20 °C, 50% RH and 1 atm.

This table is given as a guide only and is subject to change. *Table is current as of July 24, 2019*

Common Chemical Names and Symbols

Ammonia	NH_3
Benzene	C_6H_6
Carbon Dioxide	CO_2
Carbon Monoxide	CO
Chlorine	Cl_2
Chlorine Dioxide	ClO_2
Hydrogen	H_2
Hydrogen Chloride	HCl
Hydrogen Cyanide	HCN
Hydrogen Sulfide	H_2S
Methane	CH_4
Nitric Oxide	NO
Nitrogen	N_2
Nitrogen Dioxide	NO_2
Oxygen	O_2
Phosphine	PH_3
Sulfur Dioxide	SO_2

Hazardous Gases Found in Common Industrial Environments

(All values listed are established by HSE unless otherwise noted.)

Ammonia: NH_3
Colorless toxic gas with a pungent suffocating odor
PEL/TWA: 25.0 ppm STEL: 35.0 ppm
IDLH: 300.0 ppm LEL: 15.0% of volume
- Fertilizer Plants
- Water and Wastewater Treatment Plants
- Refrigeration Facilities and Cold Storage
- Semiconductor Industry

Carbon Dioxide: CO_2
Colorless, odorless gas
PEL/TWA: 5,000.0 ppm STEL: 30,000.0 ppm
IDLH: 40,000.0 ppm
- Breweries and Wineries
- Carbonated Beverage Bottling Plants
- Food Processing Plants
- Landfills

Carbon Monoxide: CO
Colorless, odorless gas – most abundant toxic gas
OSHA PEL/TWA: 50.0 ppm NIOSH PEL/TWA: 35.0 ppm
STEL: 200.0 ppm IDLH: 1,200.0 ppm
LEL: 12.5% of volume
- Fire Fighting
- Steel Mills
- Mining and Minerals
- Parking Garages

Chlorine: Cl_2
Green-yellow gas with a pungent, irritating odor
PEL/TWA: 0.5 ppm STEL: 1.0 ppm
IDLH: 30.0 ppm
- Pulp and Paper Mills
- Water Treatment Plants
- Swimming Pools and Chlorinization Plants
- Nuclear Reactors

Chlorine Dioxide: ClO_2
Red-yellow or orange-green, irritating odor
PEL/TWA: 0.1 ppm STEL: 0.3 ppm
IDLH: 5.0 ppm
- Pulp and Paper Mills
- Wastewater Treatment Plants

Hydrogen: H_2
Colorless, odorless gas
PEL/TWA: No limit set by OSHA STEL: N/A
IDLH: No limit set by NIOSH LEL: 4% by volume
- Chemical Manufacturing
- Hazmat Operations
- Power Generation

Hydrogen Chloride: HCl
Colorless to slight yellow corrosive gas with a pungent, irritating odor
OSHA PEL/TWA: 5.0 ppm STEL: N/A
LEL: 12.5% of volume IDLH: 50.0 ppm
- Vinyl Production
- Cotton Production
- Petroleum and Gas Wells
- Steel Manufacturing

Hydrogen Cyanide: HCN
Colorless toxic gas with a bitter, almond-like odor
OSHA PEL/TWA: 10.0 ppm ACGIH PEL/TWA: 4.7 ppm
STEL: 4.7 ppm IDLH: 50.0 ppm
LEL: 5.6% of volume
- Gold Plating Industries
- Precious Metal Mining and Recovery
- Nylon Manufacturing

Hydrogen Sulfide; H_2S
Colorless toxic gas with a strong odor of rotten eggs
PEL/TWA: 10.0 ppm STEL: 15.0 ppm
IDLH: 100.0 ppm LEL: 4.0% of volume
TWA value by the ACGIH: 1 ppm
STEL value by the ACGIH: 5 ppm
- Oil Fields and Refineries
- Mining and Metals Industries
- Paper Mills and Leather Tanneries
- Water Treatment and Sewer Maintenance

Nitric Oxide: NO
Colorless toxic gas
PEL/TWA: 25.0 ppm STEL: N/A
IDLH: 100.0 ppm
- Diesel Emissions
- Underground Mining
- Agriculture – Silos
- Semiconductor Plants

Nitrogen Dioxide: NO_2
Reddish-brown toxic gas with a pungent odor
PEL/TWA: 3.0 ppm STEL: 5.0 ppm
IDLH: 20.0 ppm
- Boilers and Furnaces
- Diesel Emissions
- Underground Mining
- Semiconductor Plants

Phosphine: PH_3
Colorless gas, garlic-like odor
PEL/TWA: 0.3 ppm STEL: 1.0 ppm
IDLH: 5.0 ppm LEL: 1.79% of volume
- Pesticides-Agricultural Fumigant
- Doping Agent

Sulfur Dioxide: SO_2
Colorless toxic gas with a pungent odor
PEL/TWA: 2.0 ppm STEL: 5.0 ppm
IDLH: 100.0 ppm
STEL value by the ACGIH: 0.25 ppm
- Pulp and Paper Mills
- Coal Fired Generation Stations
- Water Treatment
- Circuit Board (Etching) Industry

Gas Hazards by Industry

INDUSTRY	Combustible Gases	O_2 Deficient /Enrichment	Ammonia (NH_3)	Carbon Dioxide (CO_2)	Carbon Monoxide (CO)	Chlorine (Cl_2)	Chlorine Dioxide (ClO_2)	Hydrogen (H_2)	Hydrogen Chloride (HCl)	Hydrogen Cyanide (HCN)	Hydrogen Sulfide (H_2S)	Nitric Oxide (NO)	Nitrogen Dioxide (NO_2)	Benzene (C_6H_6)	Phosphine (PH_3)	Sulfur Dioxide (SO_2)	Volatile Organic Compounds (VOCs)
	HAZARDOUS GAS																
Agriculture	•	•	•	•	•						•	•	•		•		
Aviation	•	•		•	•												
Chemical	•	•	•		•	•		•	•		•	•	•			•	
Construction	•	•			•						•	•	•				
Electric Utilities	•	•	•		•						•					•	
Fire Service	•	•	•	•						•	•						
Food Processing & Beverage Production	•	•	•	•	•				•	•	•				•		
Gas Utilities	•	•			•						•						
Hazmat	•	•	•		•	•		•	•	•	•				•	•	•
Iron & Steel Production	•	•			•					•	•	•	•			•	
Manufacturing	•				•				•								
Marine Shipyard	•	•		•	•						•						
Mining	•	•	•	•	•					•	•	•	•				
Oil & Gas Production	•	•	•		•						•			•			•
Petrochemical	•	•	•		•						•			•			
Paper & Pulp	•	•			•	•	•				•					•	
Pharmaceutical	•	•	•			•			•		•					•	
Power Plants	•	•			•			•			•					•	
Public Works	•	•			•						•	•	•			•	
Water/Waste Water Treatment	•	•	•		•	•					•					•	•
Welding	•	•			•				•			•	•				

Volatile Organic Compounds Detected by a PID <10.6 eV

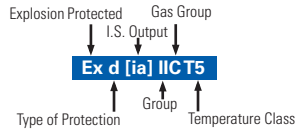
10.6 eV lamp
Acetaldehyde
(Acetic acid)
Acetic anhydride
Acetone
Acrolein
Acrylamide
Allyl alcohol
Allyl chloride
Allyl glycidyl ether
Allyl propyl disulfide
Amino pyridine
Amyl acetate
Aniline
Benzene
Benzyl chloride
Bromoform
Butadiene
Butoxyethanol
Butyl acetate
Butyl alcohol
Butyl mercaptan
Butylamine
Butyl glycidyl ether
Butyl toluene
Camphor vapor
Carbon disulfide
Chloroacetaldehyde
Chloroacetophenone
Chlorobenzene
Chloromethyl methyl ether
Chloronitropropane
Chloroprene
Chrysene
Cresol
Crotonaldehyde
Cumene
Cyclohexane
Cyclohexanol
Cyclohexanone
Cyclohexene
Cyclopentadiene
Di-ethylhexyl phthalate
Diacetone alcohol
Diazomethane
Dibutylphthalate
Dichlorobenzene
Dichloro ethyl ether
Dichloroethylene
Dichlorvos
Diesel
Diethylamino ethanol
Diethylamine
Diglycidyl ether
Diisobutyl ketone
Diisopropylanmine
Dimethylamine
Dimethylaniline
Dimethylformamide
Dimethylhydrazine
Dimethyloacetamide
Dimethylphthalate
Dinitrotoluene
Dinitro cresol
Dinitro analine
Dinitro benzene
Dioxane
Diphenyl
Dipropylene glycol methyl ether
(Epichlorohydrin)
(Ethanol)
Ethanolamine
Ethoxyethyl acetate
Ethyl acetate
Ethyl acrylate
Ethyl amyl ketone
Ethyl benzene
Ethyl bromide
Ethyl butyl ketone
Ethyl ether
Ethyl mercaptan
Ethyl silicate
Ethylamine
Ethylene dibromide
Ethylenediamine
Ethyleneimine
Furfural
Furfuryl alcohol
Gasoline
Glycidol
Heptane
Hexane
Hexanone
Hexone
Hexylacetate
Hydroquinone
Isoamyl acetate
Isobutyl acetate
Isobutyl alcohol
Isophorone
Isopropyl acetate
Isopropyl alcohol
Isopropyl ether
Isopropylamine
Isopropyl glycidyl ether
JP 4, 6, 8
Ketene
Mesityl oxide
Methyl acetate
Methyl acetylene
Methyl acrylate
Methyl amyl ketone
Methyl bromide
Methyl cellosolve acetate
Methyl ethyl ketone
Methyl hydrazine
Methyl iodide
Methyl mercaptan
Methyl methacrylate
Methyl styrene
Methylamine
Methylcyclohexane
Methylcyclohexone
Methylcyclohexanol
Monomethylaniline
Morpholine
Naphthalene
Naphthylamine
Nitroaniline
Nitrobenzene
Nitromethane
Nitrosodimethylamine
Nitrotoluene
Octane
Pentaborane
Pentane
Pentanone
Perchloroethylene
Phenol
Phenyl ether
Phenylene diamine
Phenylhydrazine
Propyl acetate
Propyl alcohol
Propylene dichloride
Propylene imine
Propylene oxide
Pyridine
Quinone
Stibine
Stoddard solvent vapor
Styrene
Terphenyls
Tetrachloroethylene
Tetrachloronaphthelene
Tetrahydrofuran
Tetramethyl lead
Toluene
Toluidine
Toner fluid vapor
Trichloroethylene
Triethylamine
Turpentine vapor
Vinyl chloride
Vinyl toluene
White spirit
Xylene

Not Detected by a PID
Acetonitrile
Carbon dioxide
Carbon monoxide
Ethane
Freons
Hydrogen
Hydrogen bromide
Hydrogen chloride
Hydrogen cyanide
Hydrogen fluoride
Methane
Nitric acid
Nitrogen
Oxygen
Ozone
Sulfur dioxide
Water

Hazardous Locations Guide

Ex Marking

IEC



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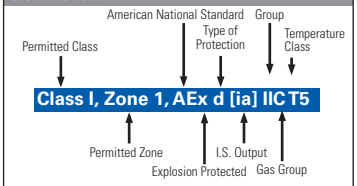
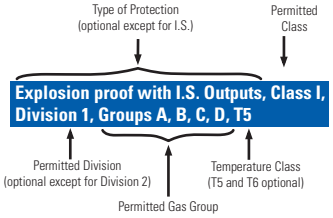
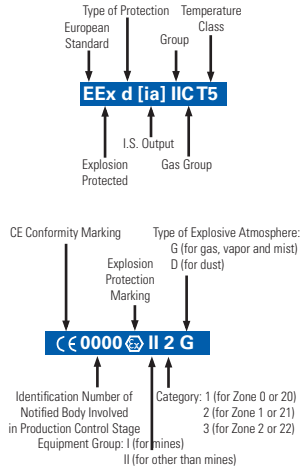


U.S. NEC®500



EU (Directive 94/9/EC) – ATEX (from July 1, 2003)



Acronyms

ATEX – Atmosphere Explosible
CENELEC – European Committee for Electrotechnical Standardization
EU – European Union
IEC – International Electrotechnical Commission
I.S. – Intrinsically Safe
MSHA – Mine Safety and Health Administration
NEC® – National Electric Code®

Types of Protection

Type of Protection	Code	Permitted Use	Standard	Protection Principle
Increased Safety	AEx e	Class I, Zone 1	FM 3600 (ISA 12.16.01*)	No arcs, sparks or hot surfaces
	EEx e	Zone 1	EN 50 019 (until July 2006)	
			or EN 60079-7	
	Ex e	Zone 1	IEC 60079-7	
Non-Incendive	(NI)	Class I, Div 2	FM 3611	
Non-Sparking	AEx nA	Class I, Zone 2	FM 3600 (ISA 12.12.02)	
	EEx nA	Zone 2	EN 50 021	
	Ex nA	Zone 2	IEC 60079-15	
Explosion Proof	(XP)	Class I, Div 1	FM 3615	Contain the explosion and extinguish the flame
Flame Proof	AEx d	Class I, Zone 1	FM 3600 (ISA 12.22.01*)	
	EEx d	Zone 1	EN 50 018	
	Ex d	Zone 1	IEC 60079-1	
Powder-Filled	AEx q	Class I, Zone 1	FM 3600 (ISA 12.25.01*)	
	EEx q	Zone 1	EN 50 017	
	Ex q	Zone 1	IEC 60079-5	
Enclosed Break	AEx nC	Class I, Zone 2	FM 3600 (ISA 12.12.02)	
	EEx nC	Zone 2	EN 50 021	
	Ex nC	Zone 2	IEC 60079-15	
Intrinsic Safety	(IS)	Class I, Div 1	FM 3610†	Limit energy of sparks and surface temperature
	AEx ia	Class I, Zone 0	FM 3610†	
	AEx ib	Class I, Zone 1	FM 3610†	
	EEx ia	Zone 0	EN 50 020/39	
	EEx ib	Zone 1	EN 50 020/39	
	Ex ia	Zone 0	IEC 60079-11	
	Ex ib	Zone 1	IEC 60079-11	
Note 1: For associated intrinsically safe apparatus suitable for installation in a hazardous area, the symbols for the type of protection ia or ib are enclosed within square brackets, for example, AEx d[ia] IIC T4. **Note 2:** For associated intrinsically safe apparatus not suitable for installation in a hazardous area, both the symbol Ex /AEx /EEx and the symbol for the type of protection ia or ib are enclosed within the same square brackets, for example, [AEx ia] IIC; In this case, a temperature class is not included.				
Limited Energy	AEx nA	Class I, Zone 2	FM 3600 (ISA 12.12.02)	
	EEx nA	Zone 2	EN 50 021	
	Ex nA	Zone 2	IEC 60079-15	
	EEx nL	Zone 2	EN 50 021	
	Ex nL	Zone 2	IEC 60079-15	
Pressurized	Type X	Class I, Div 1	FM 3620	Keep flammable gas out
	Type Y	Class I, Div 1	FM 3620	
	Type Z	Class I, Div 2	FM 3620	
	EEx p	Zone 1	EN 50 016	
	EEx nP	Zone 2	EN 50 021	
	Ex px	Zone 1	IEC 60079-2	
	Ex py	Zone 1	IEC 60079-2	
	Ex pz	Zone 2	IEC 60079-2	
	Ex nZ	Zone 2	IEC 60079-15	
Restricted Breathing	AEx nR	Class I, Zone 2	FM 3600 (ISA 12.12.02)	
	EEx nR	Zone 2	EN 50 021	
	Ex nR	Zone 2	IEC 60079-15	
Encapsulation	AEx m	Class I, Zone 1	FM 3600 (ISA 12.23.01*)	
	EEx m	Zone 1	EN 50 028	
	Ex m	Zone 1	IEC 60079-18	
Oil Immersion	AEx o	Class I, Zone 1	FM 3600 (ISA 12.16.01*)	
	EEx o	Zone 1	EN 50 015	
	Ex o	Zone 1	IEC 60079-6	

*Also shall comply with ISA 12.00.01 † Based on ISA 12.02.01

Classification of Gases and Vapors into EXPLOSION GROUPS and TEMPERATURE CLASSES

	T1	T2	T3	T4	T5
I	Methane				
IIA	Acetone Ethane Ammonia Benzol (pure) Acetic acid Methane (natural gas) Methanol Propane Toluene	Ethanol i-Amyl acetate n-Butane n-Butyl alcohol	Benzene Diesel fuel Aircraft fuel Heating oil n-Hexane	Acetylaldehyde Ethylether	
II B	Coal gas (lighting gas)	Ethylene			
II C	Hydrogen	Acetylene			Carbon disulphide

Ref: • FM Approvals – Expert Guide to Hazardous Locations © 2004 FM Global Technologies LLC
• R. STAHL Inc. – Explosive Facts

Area Classification

	Flammable Material Present Continuously	Flammable Material Present Intermittently	Flammable Material Present Abnormally
IEC/EU	Zone 0 (Zone 20 - dust)	Zone 1 (Zone 21 - dust)	Zone 2 (Zone 22 - dust)
U.S. NEC®505	Zone 0	Zone 1	Zone 2
NEC®500	Division 1	Division 1	Division 2

IEC classification per IEC 60079-10
EU classification per EN 60 079-10
U.S. classification per ANSI/NFPA 70 National Electric Code (NEC) Article 500 or Article 505

Explosion Groups

Typical Gas/Dust/Fiber	U.S. (NEC®505) IEC EU	U.S. (NEC®500)
Acetylene	Group IIC	Class I/Group A
Hydrogen	(Group IIB + H_2)	Class I/Group B
Ethylene	Group IIB	Class I/Group C
Propane	Group IIA	Class I/Group D
Methane	Group I*	Mining*
Metal Dust	None	Class II/Group E
Coal Dust	None	Class II/Group F
Grain Dust	None	Class II/Group G
Fibers	None	Class III

*Not within scope of NEC. Under jurisdiction of MSHA

Temperature Class

Maximum Surface Temperature	U.S. (NEC®505) IEC EU	U.S. (NEC®500)
450 °C	T1	T1
300 °C	T2	T2
280 °C		T2A
260 °C		T2B
230 °C		T2C
215 °C		T2D
200 °C	T3	T3
180 °C		T3A
165 °C		T3B
160 °C		T3C
135 °C	T4	T4
120 °C		T4A
100 °C	T5	T5
85 °C	T6	T6

Ingress Protection (IP) Codes

	First Number	Second Number
	Protection Against Solid Bodies	Protection Against Liquid
0	No protection	No protection
1	Objects greater than 50 mm	Vertically dripping water
2	Objects greater than 12 mm	75° to 90° dripping water
3	Objects greater than 2.5 mm	Sprayed water
4	Objects greater than 1 mm	Splashed water
5	Dust-protected	Water jets
6	Dust-tight	Heavy seas
7		Effects of immersion
8		Indefinite immersion

Approximate U.S. Enclosure Type Equivalent to IPXX

Type	→ IP	Type	→ IP	Type	→ IP
1	10	3S	54	6 and 6P	67
2	11	4 and 4X	55	12 and 12K	52
3	54	5	52	13	54
3R	14				

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Manufacturing
Industrial Scientific has two manufacturing plants—one located at corporate headquarters near Pittsburgh, PA, and another in Shanghai, China.

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