Gas & Flame Detection Systems (HGAS)

Through Honeywell's **HGAS portfolio,** ATCO delivers **cutting-edge gas detection systems** that protect personnel and assets across industries such as oil & gas, chemicals, and manufacturing.

We provide a **full suite of gas and flame detection solutions**, from small boiler rooms to large-scale refineries and petrochemical plants.

Product Portfolio

- Fixed Gas and Flame Detectors
- Real-time monitoring of worker safety
- Fixed Industrial Systems
- Easy-to-integrate and maintain gas detectors for continuous monitoring in critical areas
- Commercial Gas Detectors
- Reliable solutions for buildings, malls, tunnels, parking facilities, and more

Key Highlights

- Comprehensive Safety Coverage
- Real-Time Risk Detection
- Scalable & Versatile Deployment
- Reliable Fixed Monitoring
- Regulatory Compliance

See the brochures attached for full product information.

TABLE OF CONTENTS

Scroll Down for More

HONEYWELL OMNIPOINT™

Next Generation Gas Detection

The OmniPoint™ transmitter is a comprehensive gas detection solution designed to operate in hazardous locations and support multiple sensors in the detection of toxic, oxygen, and flammable gas hazards.

PROTECTING YOUR WORKERS AND YOUR ENTERPRISE

OmniPoint™ utilizes multiple sensor technologies to meet diverse gas detection challenges in a variety of global industries. Full color, touch key interface and Bluetooth® enabled operation make setup and maintenance intuitive.

Support for up to three sensors makes OmniPoint™ both flexible and scalable to meet your safety requirements.

FEATURES AND BENEFITS

TOUCH KEY USER INTERFACE

- Easy to operate and maintain
- Intuitive configuration and reduced set up time
- No magnet is required
- Monitor up to three sensors from the same flexible transmitter
- Universal electronics module
- Accepts different sensor inputs and simplifies ordering and stocking process

TYPICAL APPLICATIONS INCLUDE

- Power generation
- Hydrogen storage
- Oil and gas refineries
- Chemical and petrochemical plants
- Onshore oil and gas terminals
- Gas transmission (LNG)
- Utilities and wastewater

BLUETOOTH CONNECTIVITY

- Optional BLE app for configuration and maintenance plain text on the full colored display
- Information is presented in an easy to read and understand format with call-to-action instructions
- No need to refer to the manual

GLOBAL APPROVALS

- European, US and Canadian
- Compliant with and certified to ATEX, UL and CSA standards

Honeywell

OMNIPOINT™ Technical Specifications

GENERAL SPECIFICATIONS	
Description	The OmniPoint™ transmitter is a comprehensive gas detection solution designed to operate in hazardous locations and support multiple sensors in the detection of toxic, oxygen, and flammable gas hazards.
Material	Enclosure: Five-coat marine finish painted aluminum alloy or 316 stainless steel
Weight	Transmitter (enclosure only): Aluminum alloy: 2.48 kg (5.47 lb). 316 stainless steel: 5.37 kg (11.84 lb) Transmitter with display module: Aluminum alloy: 2.78 kg (6.12 lb). 316 stainless steel: 5.70 kg (12.50 lb) XPIS sensor module with cartridge: 0.80 kg (1.76 lb) XP sensor module with cartridge: 0.69 kg (1.52 lb)
Mounting	Can be mounted to flat wall surfaces of various types or to pipes using the optional pipe mount kit. The pipe mount kit allows the transmitter to be mounted to pipes from 2 in to 6 in (50 mm to 140 mm) in diameter and includes the pipe mount bracket, four carriage bolts, nuts, and lock washers. The transmitter is configured with four cable/conduit ports built into the housing for wiring and mounting sensors.
Cable Entries	Four conduit/cable entries (two right, two left, one bottom). Entry size M25 or 3/4 inch NPT One external antenna entry (top). Entry size M22
ENVIRONMENTAL	
IP Rating	IP66/IP67 in accordance with IEC/EN 60529. NEMA 4X
Operating Temperature	-55°C to 75°C (-67°F to 167°F)
Operating Humidity	0 % to 99 %RH (non condensing)
Operating Pressure	90 kPA to 110 kPa
Storage Conditions	-55°C to 75°C (-67°F to 167°F), 0 % to 99 %RH (non-condensing)
ELECTRICAL	
Input Voltage Range	12 Vdc to 32 Vdc (24 Vdc Nominal) (Catalytic or IR) and XPIS (Electrochemical) sensors and 18 Vdc to 32 Vdc (24 Vdc Nominal) Optima
Power Consumption	Transmitter : Normal 4.5 watts, Max 8.5 watts XPIS sensor (EC cell) : Max 0.3 watts XP sensor (Catalytic or IR cell) : Max 1.7 watts Max consumption is 17W for Optima + 2 XP (CB) Sensors
Visual	3 inch (76 mm) circular high resolution, full color, TFT display Four capacitive touch keys that provide navigation and other functions. LED ring indicator surrounding the 3 in (76 mm) circular display indicates the device status. (Normal operation: Green, Alarm: Red, Fault/Warning: Yellow, Bluetooth® communication: Blue)
Current Output	3 channels of fully configurable 4 mA to 20 mA providing current sink, current source and isolated modes of operation to support up to 3 sensors simultaneously. Note : OmniPoint will automatically detect whether it should operate in current sink or current source mode **Default current output settings:** 1.0 mA for fault 2.0 mA for warm-up and inhibit 3.0 mA for warning 4.0 to 20.0 mA for normal gas measurement 21.0 mA for maximum over range 4 mA to 20 mA signal accuracy : ±1 % full scale
HART® Communication	Provides HART® communication over 1st channel of 4 mA to 20 mA output compliant with HART® 7 Configurable HART® communication mode: P to P mode or Multi-drop mode (up to 8 multi-drops) **Functions Supported by HART®** Gas reading with gas name and units of measurement 4 mA to 20 mA signal level General/device information Configuration Forcing of 4 mA to 20 mA output Detailed transmitter information (calibration and configuration status, detailed fault and warning information, fault and alarm history) Detailed sensor information (supply voltage, temperature and serial number)
Relays	Provides three fully user configurable relay outputs that are activated based on current alarm state and one fault relay that is normally energized. Provides 3 x SPDT alarm and 1 x SPDT fault relay Maximum : 240 Vac, 5A (non inductive load) Minimum 5V, 10 mA (non inductive load)
CERTIFICATION	
Hazardous Area Approvals	UL cUL classified: UL 1203, UL 913, UL 61010-1, CSA C22.2 No. 25, CSA 22.2 No. 30, CSA C22.2 60097-11, CSA 22.2 No. 60079-0, CAN/CSA-C22.2 No. 61010-1-12, CSA C22.2 No. 25; CSA C22.2 No. 30 Class I, Division 1, Groups A, B, C, and D; Class II, Division 1, Groups F & G; ATEX UL 23 ATEX 2903 Rev. 0 IEC 60079-0, 7th Ed; IEC 60079-1, 7th Ed; IEC 60079-11 6th Ed.; IEC 60079-31, 3rd Ed.; IECEx UL 23.0011 Issue 0
Performance Approvals Flammable Gas	Pending

OMNIPOINT™ Technical Specifications

WIRELESS COMMUNICATION - BLE MODULE (OPTIONAL)	
Description	The BLE module provides wireless communication to enable the connection of the OmniPoint transmitter to a smartphone or tablet.
Installation	Optional BLE module is independent of the main (display) module. The external antenna must be installed with the BLE module.
Mode and Version	Bluetooth point to point mode BLE 5.0
Distance	Up to 66 ft (20 m) (mobile device dependant)
Approval	Certified and registered Bluetooth SIG. FCC, RED, IC
Function Supported	Gas reading with gas name and units of measurement General/device information Remote zero and span calibration Configuration Forcing of 4 mA to 20 mA output Detailed transmitter information (Instrument status, detailed fault and warning information, fault and alarm history) Detailed sensor information (optical signal level, supply voltage, temperature, calibration & configuration status)
MODBUS RTU MODULE (OPTIONAL)	
Description	The Modbus output module provides an isolated RS485 output to enable the connection of the OmniPoint transmitter to a multi-drop Modbus network.
Installation	As an optional module independent of the main (display) module, it can be additionally installed in the factory or in the field without any changing of the main (display) module.
Connections	RS485+, RS485-, Drain
Physical Layer	Isolated RS485, 2400 to 57,6000 baud; 9,600 default
Address	Address range is 1 to 247
Maximum # of Nodes	247; up to 32 RTUs per loop
Protocol	Modbus RTU
Function Supported	Gas reading with gas name and units of measurement General/device information Detailed transmitter information (Instrument status, detailed fault and warning information, fault and alarm history) Detailed sensor information (supply voltage, temperature, calibration & configuration status)
WIRING REQUIREMENTS	
Sensor	Two-wire, for XPIS Sensor module up to (984 ft) 300 m Two-wire, for XP Sensor module up to (984 ft) 300 m Refer to manual for mounting distances and wire gauge
GAS CONCENTRATION DISPLAY & INTERFACE	
Instrument	3 inch TFT display with ring indicator, five-digit alphanumeric characters with separate units, four touch key interface, alarm snapshot with gas trend.
Remote	Local UI or BLE 5.0 enabled device via OmniPoint app
WARRANTY	
Transmitter	5 years
Sensor Cartridge	

PART NUMBER	DESCRIPTION	WARRANTY PERIOD
OPT-R1X-FL1	Sensor Cart, Cat CH4 0-100%LEL, 5%	3 years
OPT-R1X-FL2	Sensor Cart, Cat CH4 0-100%LEL, 4.4%	3 years
OPT-R1S-HS1	Sensor Cart, H2S 0-15.0ppm, 5ppm	3 years
OPT-R1S-HS2	Sensor Cart, H2S 0-100ppm, 20ppm	3 years
OPT-R1S-OX1	Sensor Cart, O2 0-25% v/v, 23.5%	3 years
OPT-R1S-CO1	Sensor Cart, CO 0-300ppm, 100ppm	3 years
OPT-R1X-ME1	Sensor Cart, IR CH4 0-100%LEL, 5%	3 years
OPT-R1X-ME2	Sensor Cart, IR CH4 0-100%LEL, 4.4%	3 years
OPT-R1X-PR1	Sensor Cart, IR C3H8 0-100%LEL, 2.1%	3 years
OPT-R1X-PR2	Sensor Cart, IR C3H8 0-100%LEL, 1.7%	3 years
OPT-R1S-AM1	Sensor Cart, NH3 0-200ppm, 50ppm	1 year
OPT-R1S-AM2	Sensor Cart, NH3 0-1000ppm, 200ppm	1 year
OPT-R1S-CL1	Sensor Cart, CL2 0-5.0ppm, 1ppm	1 year

OMNIPOINT SENSOR SPECS

Sensor Type	Gas	Cartridge P/N	Selectable Full Scale Range	Default Range	Steps	Resolution	Lower Detectable Limit (LDL)	Lowest Alarm Level (LAL)	Default Alarm 1 Level	Alarm 1 Type	Default Alarm 2 Level	Alarm 2 Type	Operating Temperature
XPIS SENSOR													
NH_3 (Low)	Ammonia	OPT-R1S-AM1	50 ppm to 200 ppm	200 ppm	50 ppm	1 ppm	6 ppm	20 ppm	50 ppm	Rising	100 ppm	Rising	-20°C to 40°C -4°F to 104°F
NH_3 (High)	Ammonia	OPT-R1S-AM2	200 ppm to 1000 ppm	1000 ppm	50 ppm	1 ppm	30 ppm	100 ppm	200 ppm	Rising	500 ppm	Rising	-20°C to 40°C -4°F to 104°F
CO	Carbon Monoxide	OPT-R1S-CO1	100 ppm to 500 ppm	300 ppm	100 ppm	1 ppm	5 ppm	15 ppm	100 ppm	Rising	200 ppm	Rising	-40°C to 55°C -40°F to 131°F
Cl_2	Chlorine	OPT-R1S-CL1	5.00 ppm (Fixed)	5.00 ppm	N / A	0.01 ppm	0.15 ppm	0.50 ppm	1.00 ppm	Rising	2.00 ppm	Rising	-20°C to 55°C -4°F to 131°F
H_2S	Hydrogen Sulphide	OPT-R1S-HS1	10 ppm to 50 ppm	15.0 ppm	0.1 ppm	0.1 ppm	1.0 ppm	3.0 ppm	5.0 ppm	Rising	10.0 ppm	Rising	-40°C to 65°C -40°F to 149°F
H_2S (High)	Hydrogen Sulphide	OPT-R1S-HS2	50 ppm to 500 ppm	100 ppm	10 ppm	1 ppm	1 ppm	5 ppm	20 ppm	Rising	50 ppm	Rising	-40°C to 65°C -40°F to 149°F
O_2	Oxygen	OPT-R1S-OX1	25 %vol (Fixed)	25.0 %vol	N / A	0.1 %vol	0.2 %vol	5.0 %vol	23.5 %vol	Rising	19.5 %vol	Falling	-40°C to 60°C -40°F to 140°F
SO_2	Sulphur Dioxide	OPT-R1S-SO1	5 ppm to 20 ppm	15.0 ppm	5.0 ppm	0.1 ppm	0.6 ppm	2.0 ppm	5.0 ppm	Rising	10.0 ppm	Rising	-40°C to 65°C -40°F to 149°F
XP SENSOR													
FL CAT	Flammables	OPT-R1X-FL1 (UL) OPT-R1X-FL2 (ATEX)	20 %LEL to 100 %LEL	100 %LEL	10 %LEL	1 %LEL	3 %LEL	5 %LEL	20 %LEL	Rising	50 %LEL	Rising	-40°C to 75°C -40°F to 167°F
CH4 IR - LEL	Methane	OPT-R1X-ME1 (UL) OPT-R1X-ME2 (ATEX)	20 %LEL to 100 %LEL	100 %LEL	10 %LEL	1 %LEL	3 %LEL	5 %LEL	20 %LEL	Rising	50 %LEL	Rising	-40°C to 75°C -40°F to 167°F
C3H8 IR - LEL	Propane	OPT-R1X-PR1 (UL) OPT-R1X-PR2 (ATEX)	20 %LEL to 100 %LEL	100 %LEL	10 %LEL	1 %LEL	3 %LEL	5 %LEL	20 %LEL	Rising	50 %LEL	Rising	-40°C to 75°C -40°F to 167°F

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HGAS_Omnipoint™_DTS_US-EN_0524

Honeywell

Honeywell
THE POWER OF CONNECTED

Gas Detection

PROTECTION THAT MAKES SENSE

Bluetooth® Enabled Gas Detector

SENSEPOINT XCL

Expected Safety. Unexpected Simplicity.

Sensepoint XCL is a wall-mounted gas detector that delivers the safety and compliance that you expect, and the affordability and ease of use that you don't. So you can confidently meet your requirements and quickly move on to other priorities.

Especially designed for commercial and light industrial applications, Sensepoint XCL delivers just the right amount of functionality to protect your life and your premises while ensuring compliance with safety regulations.
Inside its sturdy casing, Sensepoint XCL has your choice of sensor for the gas you need to detect. Choose from oxygen, carbon monoxide, methane, propane and others, when ordering.

If you need to monitor for more than one gas hazard you can use several Sensepoint XCL detectors in different parts of your operation. Whether you need to protect a garage or a boiler room, a food processing unit or a fuel station, it is safe to rely on Sensepoint XCL to detect dangerous gasses.

Applications

- Hospitals / MRI Rooms
- Food / Meat Processing Units
- Loading Bays
- Cosmetic Labs
- Bottling and Brewery Units
- High-Rise Condominium
- Boiler Rooms
- Commercial Kitchens
- Bus Stations
- Fuel Stations
- Parking Areas
- Garages

Gas Options

Oxygen O_2

Carbon Monoxide CO

Hydrogen H_2

Hydrogen Sulfide H_2S

Nitrogen Dioxide NO_2

Ammonia NH_3

Combustible

No Expertise Required

Easy Set-Up From Your Smartphone

Sensepoint XCL enables you to use everyday technology to set up and maintain your gas detector. You don't need to worry that a technical error could put compliance or safety at risk as the Sensepoint XCL smartphone application guides you every step of the way.

Blends Into Your Environment

Functional and Aesthetical

Sensepoint XCL works in conjunction with a controller to trigger the alarm responses that you choose , or use the optional relays for local, stand-alone control. Moreover, Sensepoint XCL was built with aesthetics in mind, so it blends in visually with your environment, from lobbies to retail operations.

Easy to Install. Easy to Use. Easy to Share.

Easy and intuitive, Sensepoint XCL can be installed in just minutes. Commissioning and maintenance are straightforward, and you can generate and share your reports directly from your smartphone. So you can save time, reduce cost, and maybe even make your job a little more enjoyable.

Focus on Your Business – We'll Do the Rest.

Manage the Gas Detector from the Palm of your Hand

Thanks to Honeywell's use of Bluetooth technology, you can commission and maintain your Sensepoint XCL with ease. Just download the Honeywell Sensepoint App, register the detector with your smartphone and perform any task wirelessly — from adjusting set points to checking fault codes.

Fast Setup and Easy Calibration

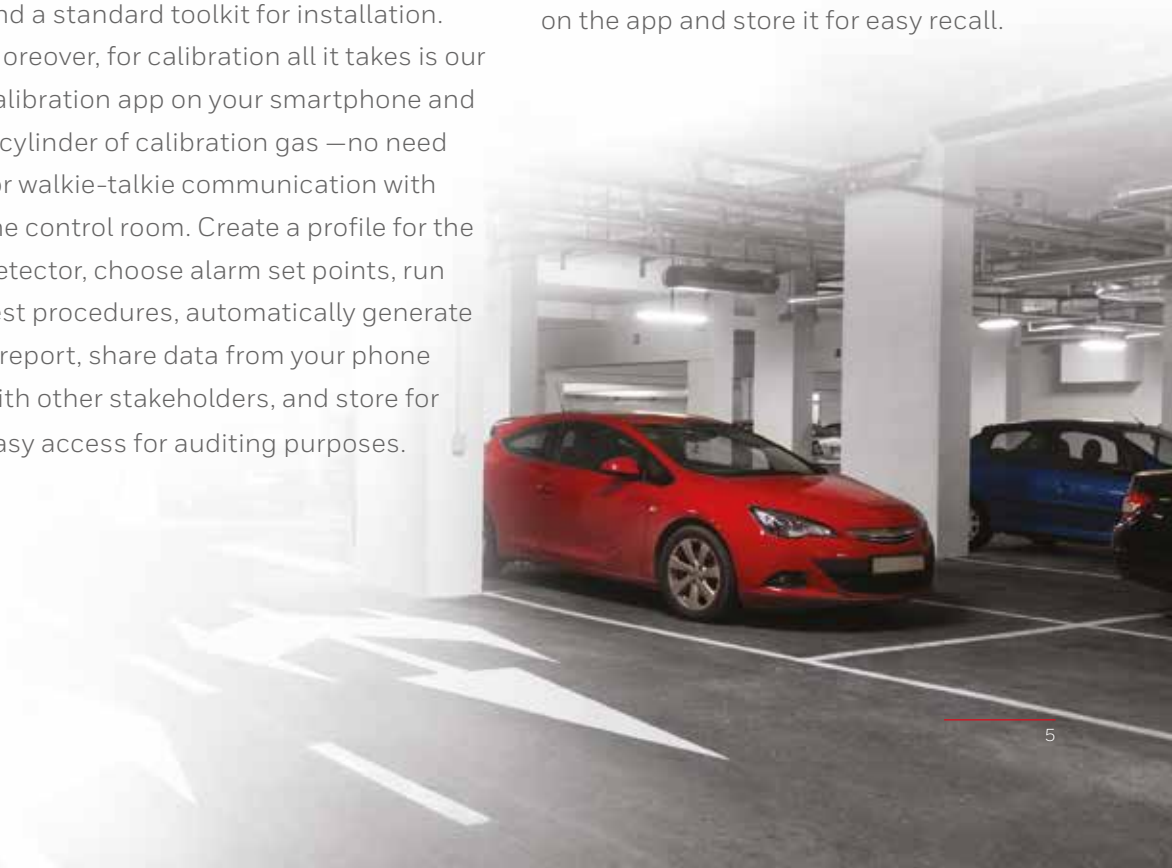
Everything you need is in the box, organized for a quick, convenient startup. Use the simple drilling template and a standard toolkit for installation. Moreover, for calibration all it takes is our calibration app on your smartphone and a cylinder of calibration gas —no need for walkie-talkie communication with the control room. Create a profile for the detector, choose alarm set points, run test procedures, automatically generate a report, share data from your phone with other stakeholders, and store for easy access for auditing purposes.

Hassle-Free Maintenance

Sensepoint XCL smartphone-based experience significantly reduces the time you spend on gas detector maintenance. Need to replace a sensor? Simply remove one screw on the cover plate, and our app guides you on the rest. Getting a fault code? There is no need to find the manual to decipher it. Our application puts diagnostic information at your fingertips.

Reports on the Spot

Do you spend up to a whole day a week manually generating test certificates and distributing reports about gas detectors? Save valuable time with easy reporting on the smartphone app. Whether you need a maintenance report or safety audit for the detector, just select the correct report on the app and store it for easy recall.



Gas Detector for a Digital World

Smart Technology

Our smartphone app delivers the same benefits you expect from any interactive application. We continually work towards adding new application features to further improve your experience. And as with any smartphone apps, we can always make sure that you are automatically kept up-to-date with the latest improvements and enhancements. We are taking smartphone apps to gas detectors throughout the Honeywell portfolio so you can get more done in less time while improving safety and compliance.

A Winning Combination

Sensepoint XCL + Touchpoint Plus

TOUCHPOINT PLUS

SENSEPOINT XCL

If you need a small system of Sensepoint XCL detectors, choose Touchpoint Plus for easy control.

User-Friendly Control

For a user-friendly detector

Everything about Sensepoint XCL is easy — and that includes control. Sensepoint XCL can be combined with Touchpoint Plus, a configurable, easy-to-use controller for up to sixteen channels of gas detection. With an intuitive touchscreen interface, Touchpoint Plus makes it easy to see the real-time gas readings of all your gas detectors and set up alarm or ventilation programming with ease. Thinking about creating a small system of Sensepoint XCL detectors? Touchpoint Plus is the perfect partner.

Want to retrofit or expand your current systems?

Want to complement your decor aesthetically?

Want to perform several gas detector tasks from a smartphone?

Want to save time and cut costs?

Sensepoint XCL is the answer for cost-effective commercial gas detection. You do not need to be a technical specialist to own a Sensepoint XCL. It is an efficient solution for parking garages and condominium buildings. It is useful for architects, engineers, installers or distributors and electrical contractors who want solutions that are easy to install, commission, and sustain. Sensepoint XCL is the perfect entry-level solution for anyone who needs to enhance workplace protection.

Find out more
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Sensepoint XCL_DS01179_02_0417_A4_EN
EMEA_EN | Rev02 | 04/17

Honeywell
THE POWER OF **CONNECTED**

Sensepoint XCD

Honeywell

Flammable, toxic and Oxygen gas detector for industrial applications

Sensepoint XCD

One-Stop Shop
- Flammable (catalytic or infrared), toxic and Oxygen versions available
- New and retrofit applications
- Suitable for indoor or outdoor use
- Stainless steel or aluminium explosion-proof housing options
- IP66 as standard

Proven and Reliable Sensor Technology
- Surecell™ electrochemical sensors
- Poison resistant flammable sensors
- Long life sensors

Global Approvals
- European, North American and Asian
- Compliant with ATEX, IECEx, UL/c-UL, KTL, PA, GB and CCCF standards

Easy to Use
- User friendly and intuitive tri-colour backlit display with digits, bar graph and icons
- Fully configurable via magnetic switches
- Selectable sink or source 4-20mA output
- Auto-inhibit during maintenance
- Optional MODBUS communications for remote diagnostics/configuration

Cost Effective
- Common transmitter platform
- Minimal training required
- Reduced spares
- Non-intrusive, one-man operation
- Plug-in sensor replacement
- Optional MODBUS multi drop option offers cabling savings

Simple Installation
- Plug-in display module removes to give access to terminal area
- Integral mounting bracket
- 2 x M20 or ¾" NPT cable/conduit entries (certification dependent)
- Removable plug/socket type terminal blocks for ease of wiring
- Sink/source switch to suit preferred wiring topology

Range of Optional Accessories
- Sunshade/deluge protection
- Duct mounting kit
- Calibration gas flow housing
- Collecting cone

The Sensepoint XCD range provides comprehensive monitoring of flammable, toxic and Oxygen gas hazards i explosive atmospheres, both indoors and outdoors. Users can modify detector operation using the LCD and magnet switches without ever needing to open th unit. This enables one-man, non-intrusive operation and reduces routine maintenance time and costs.

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

All detectors are supplied pre-configured and include 2 programmable alarm relays, 1 programmable fault relay as well as an industry standard 4-20mA output (sink or source selectable) and MODBUS.

The scale, range, relay operation, alarm set point and electronic tag number of the detector can be adjusted using the transmitter's LCD and non-intrusive magnetic switches. Outputs are automatically inhibited during adjustment, thereby reducing the risk of false alarm at the control panel during maintenance.

Sensepoint XCD has an integral mounting plate for surface mounting or can be mounted to a horizontal or vertical pipe using the optional pipe mounting bracket. Electrical installation can be made using either conduit or cable with suitable mechanical protection. Two M20 or ¾"NPT entries are provided (depending on certification). A weatherproof cap is also included for use in the harshest outdoor conditions. Other optional accessories include a sunshade/deluge protection, duct mounting kit and collecting cone.

Sensepoint XCD ensures easy installation and the fastest routine operation by removing the need for hot work permits in hazardous areas. Using easy to replace plug-in sensors, downtime is also reduced and on-going costs are minimised through the use of poison resistant flammable sensors and patented Surecell™ toxic sensors.

1. Cover
2. Display module
3. Terminal area
4. Blanking plug
5. Transmitter
6. Plug-in XCD sensor
7. Sensor retaining ring
8. Integral mounting plate
9. Weather protection assembly
10. Cable/conduit entry (x2)
11. Certification label

Typical Applications
- Industrial manufacturing facilities
- Power plants
- Waste water facilities
- Utilities
- Food and beverage production
- Refineries and chemical plants
- Onshore oil and gas terminals
- Production platforms
- Exploration and drilling

Sensepoint XCD Overview

There are three different types of the XCD transmitter for use with three different families of sensors.

The mV type transmitter is for use with the mV family of XCD sensors including catalytic sensors to detect flammable gases in the range 0-100%LEL and infrared (IR) sensors for detection of Hydrocarbon gases in the range 0-100%LEL. Two IR Hydrocarbon sensors are available; one linearised to Methane and one linearised to Propane. The Propane version has linear cross sensitivities factors for Ethylene, Butane and Pentane. There is also an IR CO_2 sensor available in the range 0-2%Vol.

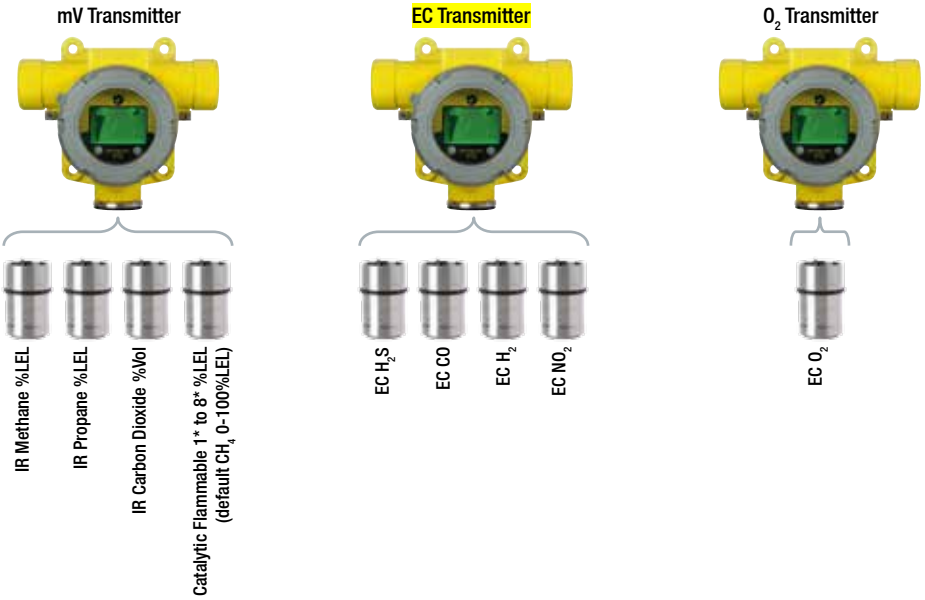
The EC type transmitter is for use with the EC family of XCD sensors including Carbon Monoxide (CO), Hydrogen Sulphide, (H_2S), Nitrogen Dioxide (NO_2) and Hydrogen (H_2).

The Oxygen transmitter is for use with the Oxygen (O_2) XCD sensors.

A transmitter can auto-recognise any sensor from within its sensor family. The sensor simply plugs into the bottom of the transmitter and the transmitter automatically configures itself accordingly.

Sensepoint XCD Sensor Families, Gases and Ranges

Sensor Family		Gas	User Selectable Full Scale Range	Default Range	Steps	Selectable Cal Gas Range	Default Cal Point
	mV	**Catalytic Bead Sensors**				30 to 70% of selected full scale range	
		Flammable 1 to 8*	20 to 100%LEL	100%LEL	10%LEL		50%LEL
		Infrared Sensors					
		Methane	20 to 100%LEL	100%LEL	10%LEL		50%LEL
		Propane	20 to 100%LEL	100%LEL	10%LEL		50%LEL
		Carbon Dioxide	2.00%Vol. only	2.00%Vol.	n/a		1.00%Vol.
	EC	**Electrochemical Sensors**					
		Hydrogen Sulphide	10.0 to 100.0ppm	50.0ppm	0.1ppm		25ppm
		Carbon Monoxide	100 to 1,000ppm	300ppm	100ppm		100ppm
		Hydrogen	1,000ppm only	1,000ppm	n/a		500ppm
		Nitrogen Dioxide	10.0 to 50.0ppm	10.0ppm	5.0ppm		5.0ppm
	O_2	Oxygen	25.0%Vol. only	25.0%Vol.	n/a	20.9%Vol. (Fixed)	20.9%Vol.



Ready, Steady, Go!

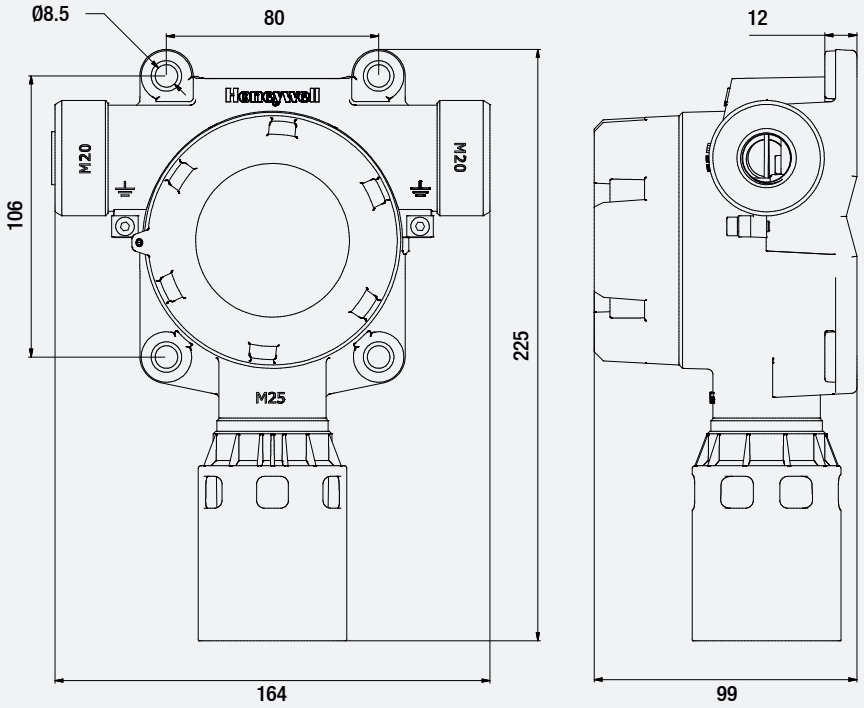
Sensepoint XCD uses three instantly recognisable 'traffic light' colours to indicate its status. The large tri-colour backlit LCD is steady green to indicate normal operation, flashes yellow to indicate a fault/warning and flashes red to indicate an alarm. This allows anyone in the area to clearly see at a glance the status of any detector. This can be particularly useful to identify detector status if the detector is located in a difficult to access area or if a number of detectors are located in the same area.

Installation

Outline Installation Dimensions

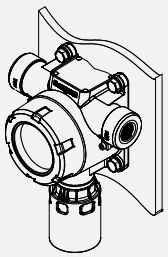
The Sensepoint XCD transmitter has an integral mounting plate consisting of four mounting holes on the transmitter body. The transmitter may be fixed directly to a surface mounting, or to a horizontal or vertical pipe/structure, 40.0-80.0mm (1.6 to 3.1") in diameter/cross section. The pipe mounting bracket accessory (optional) may be used for this purpose.

User cable entries shown (2 x M20) are for ATEX/IECEx version enclosures. UL/c-UL versions have 2 x ¾"NPT conduit entries. A suitable blanking plug is supplied which must be used to seal any unused entry. The blanking plug must be suitably sealed to maintain the IP rating of the detector.

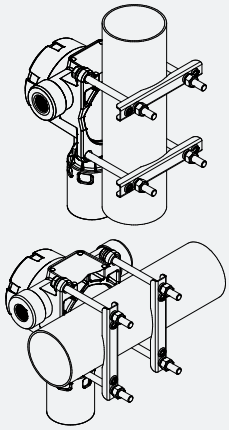


All dimensions in mm.
1" = 25.4mm

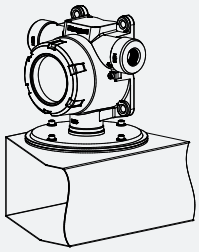
Installation Options



Wall Mounted



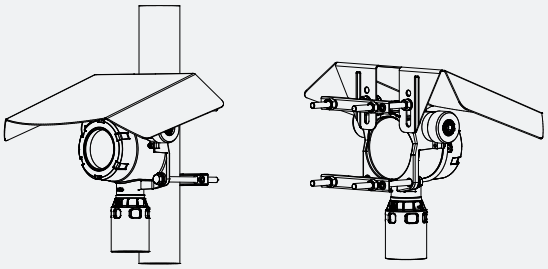
Vertical or horizontal pipe mounted
(Using optional pipe mounting bracket)



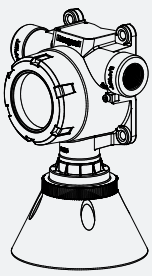
Duct Mounted

Other Accessories

Various accessories are available for different applications:



Sunshade/Deluge protection



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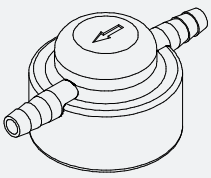


Gassing Cap

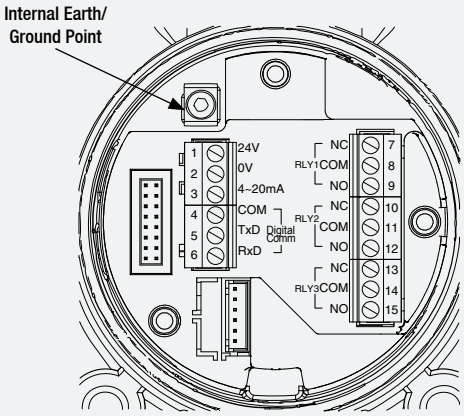
Installation

Electrical

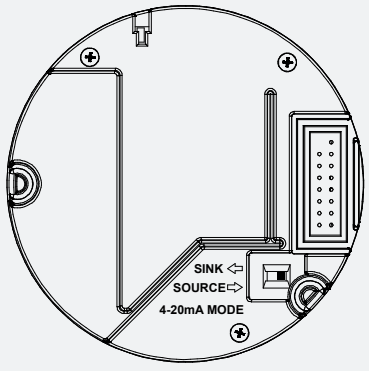
Sensepoint XCD is designed for use in potentially explosive atmospheres. As such, installation should follow national guidelines using suitable mechanically protected cable and glands or conduit. Use 0.5mm^2 (20AWG) to 2.5mm^2 (~13AWG) cross sectional area cable as needed to ensure minimum operating voltage at the detector, depending on installed cable length. Cable diameter should be selected to maintain the minimum required voltage for the longest installed cable length under maximum power.

Terminal Module Connections

Terminal Number	Marking	Connection	Description
1	24V	+V Supply	Controller Connections
2	0V	-V Supply (0VDC)	
3	4~20mA	Current Output Signal	
4	COM	Drain	MODBUS RTU. RS485 (Optional)
5	TxD	MODBUS B (+)	
6	RxD	MODBUS A (-)	
7	RLY1/NC	Normally Closed	Programmable Relay 1 (Default A1)
8	RLY1/COM	Common	
9	RLY1/NO	Normally Open	
10	RLY2/NC	Normally Closed	Programmable Relay 2 (Default A2)
11	RLY2/COM	Common	
12	RLY2/NO	Normally Open	
13	RLY3/NC	Normally Closed	Programmable Relay 3 (Default Fault)
14	RLY3/COM	Common	
15	RLY3/NO	Normally Open	



Terminal Module



Puck Rear View

Note: Terminal Blocks are plug/socket type and may be removed to ease wiring.

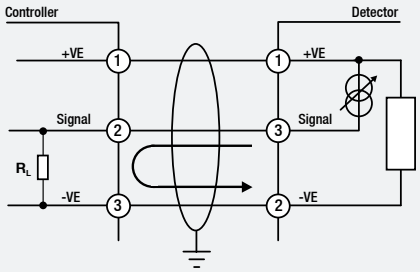
Typical Cable Lengths

Typical Cable Data			Maximim Cable Length					
Cable Size (Cross Sectional Area)	Cable Resistance		Catalytic		EC		IR	
	Ω/km	Ω/mi	Metres	Feet	Metres	Feet	Metres	Feet
0.5mm^2 (20AWG*)	36.8	59.2	356	1167	478	1568	420	1379
1.0mm^2 (17AWG*)	19.5	31.4	671	2201	902	2956	793	2599
1.5mm^2 (16AWG*)	12.7	20.4	1031	3387	1384	4549	1217	4000
2.0mm^2 (14AWG*)	10.1	16.3	1296	4239	1741	5694	1531	5006
2.5mm^2 (13AWG*)	8	12.9	1636	5356	2197	7194	1932	6326

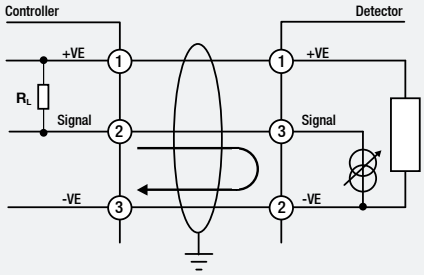
Note: Table given for guidance only. Users should calculate maximum distances using actual data for cable being used. Typical calculation assumes minimum guaranteed controller supply of 24VDC, minimum detector voltage of 16VDC and maximum power supply under full alarm. R_L (max) is 250ohms.

Wiring Schematics

The Sensepoint XCD transmitter may be wired in either Current Sink or Current Source configuration. These two options are offered to allow greater flexibility in the type of control system that it can be used with. Sink/Source is selectable via the switch located on the back side of the display module; accessible by removing the display module during installation/ commissioning.



XCD Source Configuration



XCD Sink Configuration

Note: Terminate cable screen at the detector or the controller, not both.

Technical Summary

Sensepoint XCD Detector

Use

3 wire, 4-20mA and RS485 MODBUS output fixed point detector with in-built alarm and fault relays for the protection of personnel and plant from flammable, toxic and Oxygen hazards. Incorporating a transmitter with local display and fully configurable via non-intrusive magnetic switch interface. Wide range of sensors available.

Electrical

Input Voltage Range	16 to 32VDC (24VDC nominal) for ATEX/IECEx/AP Versions 12 to 32VDC (24VDC nominal) for UL/CSA version
Max Power Consumption	Maximum power consumption is dependent on the type of gas sensor being used. Electrochemical cells = 3.7W, IR = 3.7W and catalytic = 4.9W. Maximum inrush current = 800mA at 24VDC
Current Output ≥0.0<1.0mA 2.0mA or 4.0mA (17.4mA) 4.0mA to 20.0mA 22.0mA	Sink or source Fault Inhibit (during configuration/user settings) Normal gas measurement Maximum over range
Terminals	15 x screw terminals suitable for wire diameter 0.5mm^2 to 2.5mm^2 (20AWG to 13AWG)
Relays	3 x 5A@250VAC. Selectable normally open or normally closed (switch) and energised/de-energised (programmable) Alarm relays default normally open/de-energised. Fault relay default normally open/energised
Communication	RS485, MODBUS RTU (Optional)

Construction

Material	Housing	Epoxy painted aluminium alloy LM25 or 316 stainless steel
	Sensor	316 stainless steel
	Weather Protection	Plastic
Weight (approx)	Aluminium Alloy LM25	2.0kg (4.4lbs)
	316 Stainless Steel	5.0kg (11lbs)
Mounting	Integral mounting plate with 4 x mounting holes suitable for M8 bolts Optional pipe mounting kit for horizontal or vertical pipe Ø1.5 to 3" (2" nominal)	
Entries	European ATEX/IECEx versions: 2 x M20 cable entries North American UL/c-UL versions: 2 x ¾"NPT conduit entries. Suitable blanking plug supplied for use if only 1 entry used. Seal to maintain IP rating	

Detectable Gases and XCD Sensor Performance

Gas	User Selectable Full Scale Range	Default Range	Steps	User Selectable Cal Gas Range	Default Cal Point	Response Time (T90) Secs	Accuracy	Operating Temperature* Min	Operating Temperature* Max	Default Alarm Points A1	Default Alarm Points A2
Electrochemical Sensors											
Oxygen	25.0%Vol. only	25.0%Vol.	n/a	20.9%Vol. (Fixed)	20.9%Vol.	<30	<+/-0.5%Vol.	-20°C / -4°F	55°C / 131°F	19.5%Vol. ▼	23.5%Vol. ▲
Hydrogen Sulphide	10.0 to 100.0ppm	50.0ppm	1ppm	30 to 70% of selected full scale range	25ppm	<50	<+/-1ppm	-20°C / -4°F	55°C / 131°F	10ppm ▲	20ppm ▲
Carbon Monoxide	100 to 1,000ppm	300ppm	100ppm		100ppm	<30	<+/-6ppm	-20°C / -4°F	55°C / 131°F	100ppm ▲	200ppm ▲
Hydrogen	1,000ppm only	1,000ppm	n/a		500ppm	<65	<+/-25ppm	-20°C / -4°F	55°C / 131°F	200ppm ▲	400ppm ▲
Nitrogen Dioxide	10.0 to 50.0ppm	10.0ppm	5.0ppm		5.0ppm	<40	<+/-3ppm or +/-20%	-20°C / -4°F	55°C / 131°F	0.7ppm ▲	2.0ppm ▲
Catalytic Bead Sensors				25 to 95% of selected full scale range							
Flammable 1 to 8*	20 to 100%LEL	100%LEL	10%LEL		50%LEL	<25	<+/-1.5%LEL	-20°C / -4°F	55°C / 131°F	20%LEL ▲	40%LEL ▲
Infrared Sensors				30 to 70% of selected full scale range							
Methane	20 to 100%LEL	100%LEL	10%LEL		50%LEL	<30	<+/-1.5%LEL	-20°C / -4°F	55°C / 131°F	20%LEL ▲	40%LEL ▲
Propane	20 to 100%LEL	100%LEL	10%LEL		50%LEL	<30	<+/-1.5%LEL	-20°C / -4°F	55°C / 131°F	20%LEL ▲	40%LEL ▲
Carbon Dioxide	2.00%Vol.	2.00%Vol.	n/a		1.00%Vol.	<30	<+/-0.04%Vol.	-20°C / -4°F	55°C / 131°F	0.40%Vol. ▲	0.80%Vol. ▲

▲ - Rising Alarm ▼ - Falling Alarm

NOTES

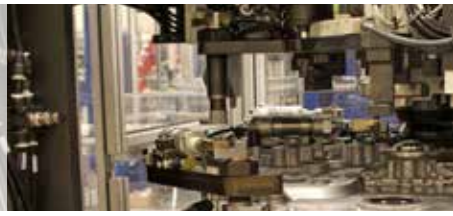
Performance data is: 1. Taken at nominal 20°C, 50%RH. 2. Applicable over the range 10 to 90% full scale. 3. Measured on units calibrated at 50% full scale. 4. Accuracy at 10% of default full scale (typical A1 alarm) of applied gas, or minimum (whichever is greater). 5. Measured at 500ml/min for IR, Toxics and O_2, 1 Ltr/min for Catalytic bead using the calibration cup (S3KCAL).

*Extended operating temperature range of -40°C to +65°C (-40°F to +149°F) for all sensors except for IR and H_2 EC sensors, with an accuracy of +/- 30% of applied gas from -20°C to -40°C (-4°F to -40°F) and +55°C to +65°C (+131°F to +149°F). Long term operation at this range may cause decline in sensor performance. Contact Honeywell Analytics for any additional data or details.

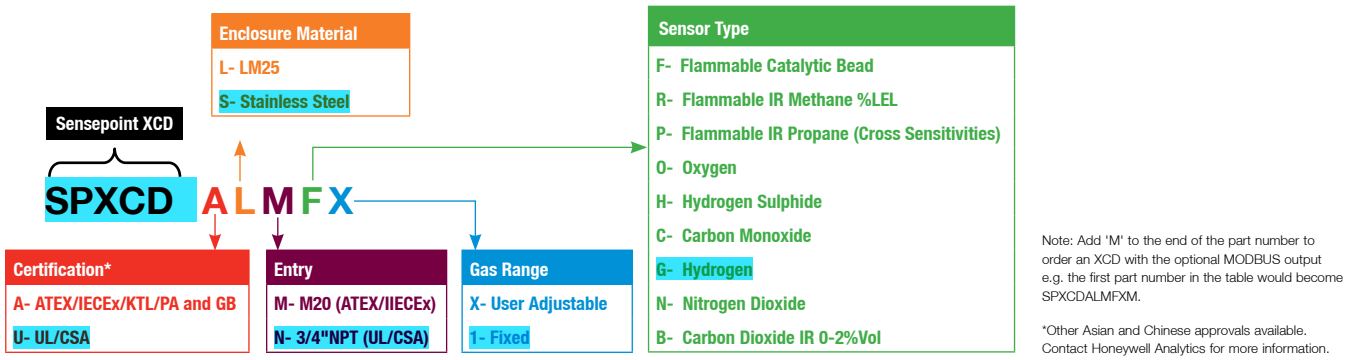
Certification

European	ATEX Ⓔ II 2 GD Ex d IIC Gb T6 (Ta -40ºC to +65ºC) T5 (Ta -40ºC to +75ºC) Ex tb IIIC T85°C Db IP66 T100ºC (Ta -40ºC to +75ºC)
International	IECEx Ex d IIC Gb T6 (Ta -40ºC to +65ºC) T5 (Ta -40ºC to +75ºC) Ex tb IIIC T85°C Db IP66 T100ºC (Ta -40ºC to +75ºC)
China	GB Ex d IIC T4 GB3836.1&2 -2000, PA, CCCF
Korea	KTL Ex d IIC T6 (-40°C to +65°C)
North America	UL/c-UL - Class I, Division 1, Groups B, C and D, Class I, Division 2, Groups B, C & D, Class II, Division 1, Groups E, F & G, Class II, Division 2, Groups F & G. -40ºC to +65ºC
EMC	EN50270:2006 EN6100-6-4:2007
Performance	ATEX, EN60079-29-1:2007 (flammable), EN45544 (Toxic), EN50104 (Oxygen), EN50271 China: PA Pattern Measurement (for transmitter and toxic gas sensors) "CCCF" Shenyang for Flammable (fire dept approval) CSA C22.2-152

Technical Summary cont. and Ordering Information



Environmental	
IP Rating	IP66 in accordance with EN60529:1992
Certified Temperature Range	-40ºC to +75ºC (-40ºF to +167ºF) Note: The detector display may become illegible at temperatures below -20°C, but the detector continues its gas monitoring function. The display is not damaged and recovers when the temperature rises back above -20°C.
Operating Humidity	Continuous 20-90%RH (non-condensing), Intermittent 10-99%RH (non-condensing)
Operating Pressure	90-110kPa (EC Toxic Sensors), 80-12kPa (EC Oxygen, Catalytic Bead and Infrared Sensors)
Storage Conditions	-25°C to +65°C (-13°F to 131°F)
Ordering Information	
Standard Supply	Sensepoint XCD is supplied complete with integral wall mounting plate, 2 x M20 cable entry (ATEX/IECEx) or 2 x ¾"NPT conduit entries (UL/cUL), 1 x M20 or 1 x ¾"NPT plug, Allen key for locking screw, weatherproof cap, operating magnet, sensor cartridge with retainer, quick start guide and instruction manual CD. Default settings, ranges and calibrations are 100% tested at the factory. Each unit is supplied with a calibration and test certificate.
Shipping Details	Shipping carton dimensions: L312mm (12.3") x W223mm (8.8") x D110mm (4.3") Approximate weight: Aluminium 2.5kg (5.5lbs), Stainless Steel 5.5kg (12.1lbs)



Note: Add 'M' to the end of the part number to order an XCD with the optional MODBUS output e.g. the first part number in the table would become SPXCDALMFXM.

*Other Asian and Chinese approvals available. Contact Honeywell Analytics for more information.

Sensepoint XCD Detector ATEX/IECEx/KTL, PA & GB (Aluminium LM25)*	
SPXCDALMFX	ATEX/IECEx/KTL/PA and GB approved SP XCD Flammable CAT 0-100%LEL (20 to 100%LEL, 10%LEL) with LM25, M20 Entry
SPXCDALMRX	ATEX/IECEx/KTL/PA and GB approved SP XCD (Methane) IR 0-100%LEL (20 to 100%LEL, 10%LEL) with LM25, M20 Entry
SPXCDALMPX	ATEX/IECEx/KTL/PA and GB approved SP XCD (Propane) IR 0-100%LEL (20 to 100%LEL, 10%LEL) with LM25, M20 Entry
SPXCDALMO1	ATEX/IECEx/KTL/PA and GB approved SP XCD Oxygen 25.0%/Vol. with LM25, M20 Entry
SPXCDALMHX	ATEX/IECEx/KTL/PA and GB approved SP XCD Hydrogen Sulphide 0-50.0ppm (10.0 to 100.0ppm, 1.0ppm) with LM25, M20 Entry
SPXCDALMCX	ATEX/IECEx/KTL/PA and GB approved SP XCD Carbon Monoxide 0-300ppm (100-1000ppm, 100ppm) with LM25, M20 Entry
SPXCDALMG1	ATEX/IECEx/KTL/PA and GB approved SP XCD Hydrogen 0-1000ppm with LM25, M20 Entry
SPXCDALMNX	ATEX/IECEx/KTL/PA and GB approved SP XCD Nitrogen Dioxide 0-50.0ppm (10.0-50.0, 5.0ppm) with LM25, M20 Entry
SPXCDALMB1	ATEX/IECEx/KTL/PA and GB approved SP XCD Carbon Dioxide IR 0-2.00%Vol. with LM25, M20 Entry
Sensepoint XCD Detector ATEX/IECEx/KTL, PA & GB (316 Stainless Steel)*	
SPXCDASMFX	ATEX/IECEX and AP approved SP XCD Flammable CAT 0-100%LEL (20 to 100%LEL, 10%LEL) with 316SS, M20 Entry
SPXCDASMRX	ATEX/IECEX and AP approved SP XCD (Methane) IR 0-100%LEL (20 to 100%LEL, 10%LEL) with 316SS, M20 Entry
SPXCDASMPX	ATEX/IECEX and AP approved SP XCD (Propane) IR 0-100%LEL (20 to 100%LEL, 10%LEL) with 316SS, M20 Entry
SPXCDASMO1	ATEX/IECEX and AP approved SP XCD Oxygen 25.0%/Vol. with 316SS, M20 Entry
SPXCDASMHX	ATEX/IECEX and AP approved SP XCD Hydrogen Sulphide 0-50.0ppm (10.0 to 100.0ppm, 1.0ppm) with 316SS, M20 Entry
SPXCDASMCX	ATEX/IECEX and AP approved SP XCD Carbon Monoxide 0-300ppm (100-1000ppm, 100ppm) with 316SS, M20 Entry
SPXCDASMG1	ATEX/IECEX and AP approved SP XCD Hydrogen 0-1000ppm with 316SS, M20 Entry
SPXCDASMNX	ATEX/IECEX and AP approved SP XCD Nitrogen Dioxide 0-50.0ppm (10.0-50.0, 5.0ppm) with 316SS, M20 Entry
SPXCDASMB1	ATEX/IECEX and AP approved SP XCD Carbon Dioxide IR 0-2.00%Vol. with 316SS, M20 Entry

Optional Accessories	
S3KCAL	Calibration cup
SPXCDCC	Collecting cone for use with lighter than air gases
SPXCDDMK	Duct mounting kit
SPXCDHMANEN	Hard copy manual in English
SPXCDMTBR	Mounting bracket (inc. bolts, nuts, brackets)
SPXCDSDP	Sunshade/Deluge Protection
00780-A-0100	ATEX approved junction box (Explosion-proof)

Spare XCD Sensors (316 Stainless Steel)	
SPXCDXSFXSS	Flammable CAT 0-100%LEL (20 to 100%LEL, 10%LEL)**
SPXCDXSRXSS	Methane IR 0-100%LEL (20 to 100%LEL, 10%LEL)**
SPXCDXSPXSS	Propane IR 0-100%LEL (20 to 100%LEL, 10%LEL)**
SPXCDXSO1SS	Oxygen 25.0%/Vol. only
SPXCDXSHXSS	Hydrogen Sulphide 0-50.0ppm (10.0 to 100.0ppm, 1.0ppm)**
SPXCDXSCXSS	Carbon Monoxide 0-300ppm (100-1000ppm, 100ppm)**
SPXCDXSG1SS	Hydrogen 0-1000ppm only
SPXCDXSN1SS	Nitrogen Dioxide 0-50.0ppm (10.0-50.0ppm, 5.0ppm)**
SPXCDXSB1SS	Carbon Dioxide IR 0-2.00%Vol. only

*For UL/c-UL versions simply change the letters in the part number for certification and entry e.g. first part number in table above would become SPXCDULNFX.
**For further details of user configurable ranges refer to "Detectable Gases and XCD Sensor Performance" table on page 6.
Note: Add 'M' to the end of the part number to order an XCD with the optional MODBUS output e.g. the first part number in the table would become SPXCDALMFXM.

Our Product Range

Honeywell

Fixed Gas Monitoring

Honeywell Analytics offers a wide range of fixed gas detection solutions for a diverse array of industries and applications including: Commercial properties, industrial applications, semiconductor manufacturers, energy plants and petrochemical sites.

- Detection of flammable, Oxygen and toxic gases (including exotics)
- Innovative use of four core sensing technologies – paper tape, electrochemical cell, catalytic bead and infrared
- Capability to detect down to Parts Per Billion (ppb) or Percent by Volume (%v/v)
- Cost effective regulatory compliance solutions

Portable Gas Monitoring

When it comes to personal protection from gas hazards, Honeywell Analytics has a wide range of reliable solutions ideally suited for use in confined or enclosed spaces. These include:

- Detection of flammable, Oxygen and toxic gases
- Single gas personal monitors – worn by the individual
- Multi-gas portable gas monitors – used for confined space entry and regulatory compliance
- Multi-gas transportable monitors – used for temporary protection of area during site construction and maintenance activities

Technical Services

At Honeywell Analytics, we believe in the value of great service and customer care. Our key commitment is providing complete and total customer satisfaction. Here are just a few of the services we can offer:

- Full technical support
- Expert team on hand to answer questions and queries
- Fully equipped workshops to ensure quick turnaround on repairs
- Comprehensive service engineer network
- Training on product use and maintenance
- Mobile calibration service
- Customised programmes of preventative/corrective maintenance
- Extended warranties on products

Find out more

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We Save Lives

12542

XNX Universal Transmitter

Honeywell

A universal transmitter compatible with all Honeywell Analytics gas sensor technologies

XNX Universal Transmitter

Flexible
- Compatible with all Honeywell Analytics gas sensors
- Allows selection of best sensor technology for each application
- Choice of all industry standard output signals
- Ability to adapt configuration as site needs change
- Future-proofed for any new output standards

Common Transmitter Platform
- Simplified and reduced cost of installation
- Reduced training time and cost
- Less chance of misinterpreting messages
- Less chance of incorrectly changing settings
- Reduced maintenance, spares, stock and cost

Global Approvals
- European, US and Canadian
- Compliant with ATEX, UL and CSA standards
- ATEX, UL and CSA performance approval
- IEC61508 SIL 2

Easy to Use
- Easy read multilingual backlit LCD with text, bar graph, digits and icons
- Local or remote sensor mounting options
- Selectable sink, source or isolated 4-20mA output to suit preferred wiring topology
- HART® communications as standard for remote diagnostics/configuration

Reduced Operational Costs
- Fully configurable via non-intrusive magnetic switches
- No hot work permit needed
- Hot swap toxic and Oxygen sensor cartridges
- Serviceable catalytic and IR sensors
- Auto-inhibit during maintenance

Friendly Installation
- Integral surface mounting lugs or optional pipe or ceiling mounting brackets
- 5 x M25 or ¾" NPT cable/conduit/sensor entries
- Plug-in 'POD' module removes to give access to terminal area
- Removable plug/socket type terminal blocks for ease of wiring

Typical Applications
- Offshore oil and production platforms
- Oil and gas exploration and drilling
- Refineries
- Chemical and petrochemical plants
- Onshore oil and gas terminals
- Gas transmission
- Power stations

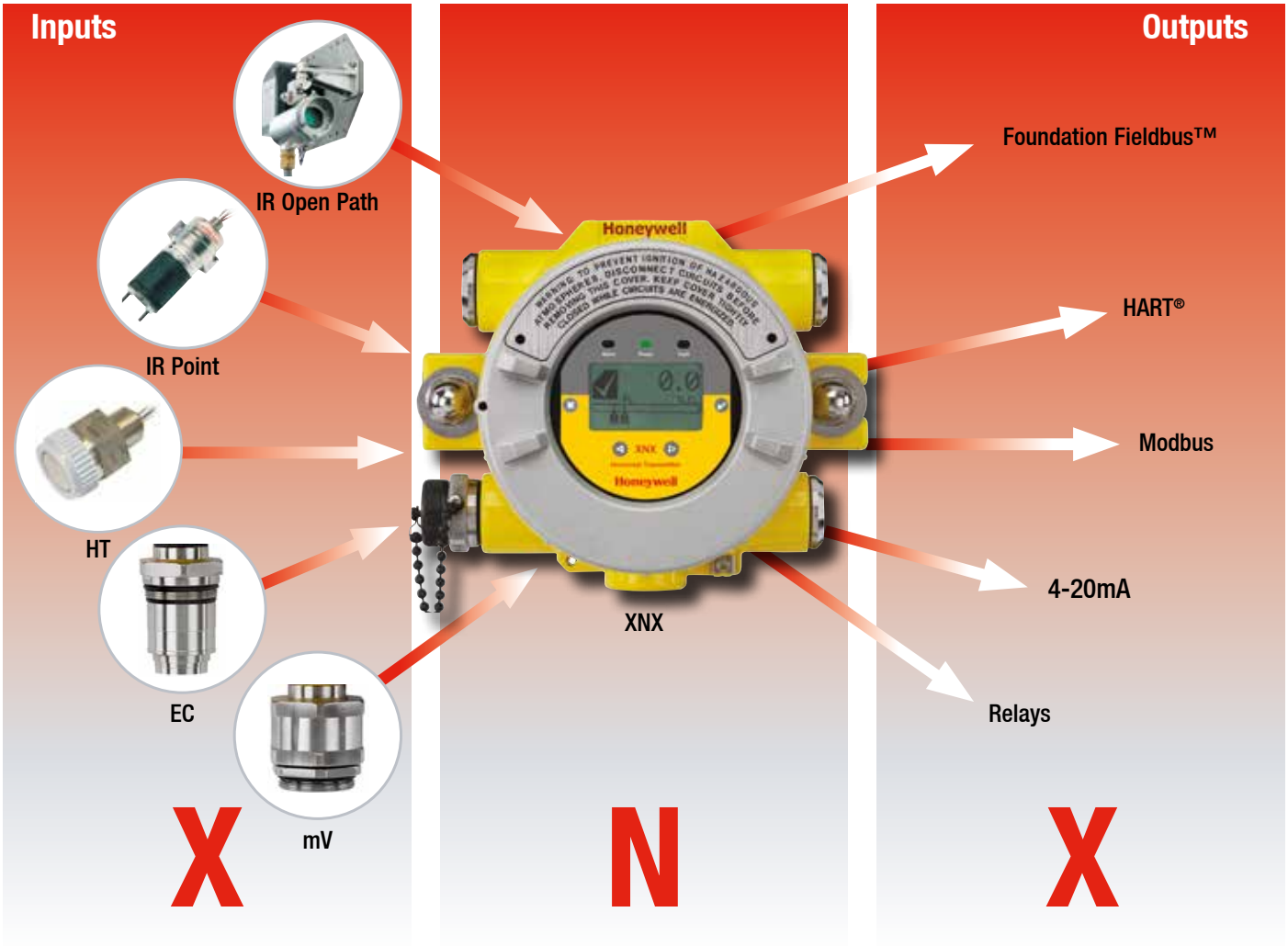
XNX is an extremely flexible transmitter that can be configured to accep from any of the Honeywell Ana of gas sensor technologies. It can also be configured to provide a wide variety of industry standard output signals. This enables users to have a single type of interface to all their gas detection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

The most effective gas detection systems often employ a variety of detection technologies including point flammable detectors (both catalytic and infrared type), toxic and Oxygen electrochemical cell type detectors and open path infrared detectors. XNX provides a common transmitter interface to all of these and can be configured to provide industry standard signal outputs to match the individual requirement of each application or the preferred site standard. If site output standards change, XNX can be reconfigured to provide the new required output. XNX has also been future-proofed by having the ability to have other output modules fitted as new output standards are developed and adopted by industry.

Having a common transmitter platform for all your gas detectors brings further benefits. Common tools and installation methods simplifies and reduces cost of installation. The common user interface makes operation faster to learn and easier to navigate, thus reducing time needed for training as well as reducing the chance of incorrectly interpreting messages or incorrectly changing settings. Common spare parts also mean reduced maintenance spares stock levels and cost for all detectors.

XNX allows you to apply the most appropriate gas detection technologies for each application, standardise the interface to those detectors and has the flexibility to provide the required signal outputs. With XNX the answer is always yes.

XNX Universal Transmitter



XNX Transmitter

XNX has Worldwide hazardous area and performance approvals and is housed in a flameproof enclosure that is available in either painted marine grade aluminum alloy or stainless steel 316 versions. A large backlit multilingual LCD clearly indicates the unit's status using a combination of text, digits and icons. Users can modify its operation using the LCD and magnet switches without ever needing to open the unit. An optional local IS HART® terminal port is also available. Both enable one man, non-intrusive, operation and reduce routine maintenance time and costs. Local LEDs are also provided to indicate the unit's status at a glance.

XNX Transmitter Sensor Compatibility

XNX is compatible with all of the Honeywell Analytics range of industrial fixed gas sensors including Searchline Excel, Searchpoint Optima Plus, Sensepoint (HT and PPM) and Model 705. For further information on these sensors, please refer to their individual datasheets.

XNX with Searchpoint Optima Plus

XNX MPD Sensor

XNX EC Sensor

The Multi Purpose Detector (MPD) is a serviceable stainless steel sensor housing with plug-in catalytic and infrared sensor cartridges. The catalytic sensors measure flammable gases in the range 0-100%LEL and the infrared sensors measure Hydrocarbons in the range 0-100%LEL, or Methane 0-100%LEL (or 0-5%Vol) and CO_2 0-5%Vol. See the specifications section for full details of the MPD sensor.

The XNX EC sensor is also a serviceable stainless steel sensor with a wide range of toxic and Oxygen plug-in sensor cartridges. The XNX EC sensor interface to the XNX transmitter is intrinsically safe, allowing the sensors to be 'hot swapped' without the need for a hot work permit. This reduces the cost of ownership by reducing the cost and time to service the detector.

XNX Universal Transmitter

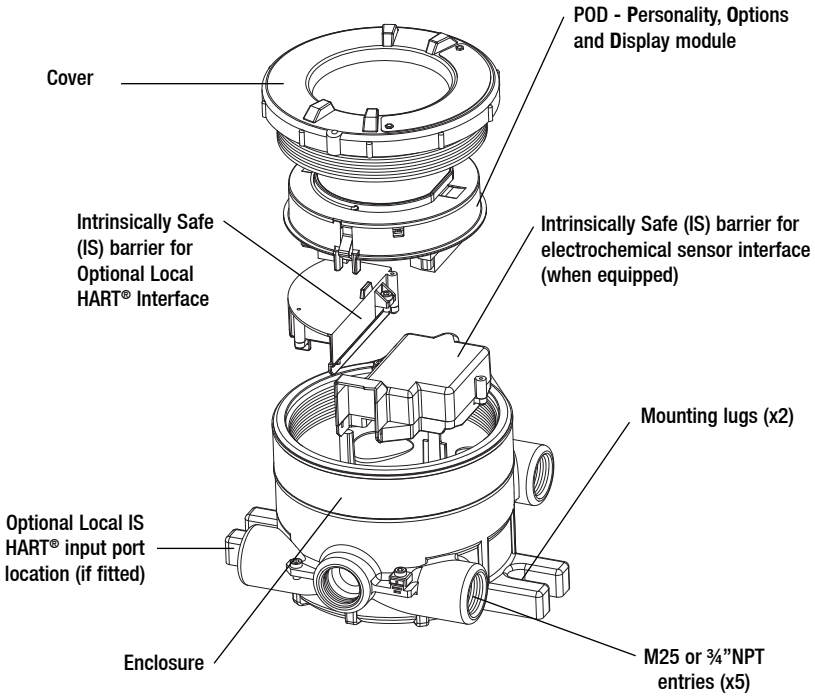
XNX Transmitter Configuration

XNX has three basic personalities (configurations) which support different types of sensor. The personality boards and optional output interfaces are enclosed in the electronics POD (Personality, Options and Display). The POD determines the XNX transmitter behaviour based on the sensor type attached to it and the selected output options.

The mV (millivolt) personality is used for all mV signal input sensors including MPD, Sensepoint HT, PPM and the Model 705. The EC (Electrochemical cell) personality is for use with the XNX EC toxic and Oxygen sensors. The IR (infrared) personality is for use with the Searchline Excel open path and Searchpoint Optima Plus point infrared gas detectors.

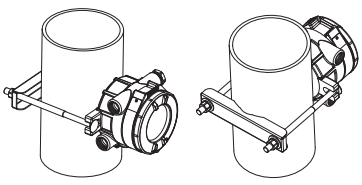
The table below shows the three basic XNX transmitter configurations and the sensors each supports.

XNX Transmitter Main Components

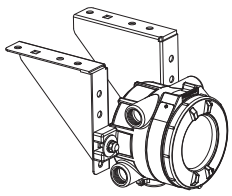


Personality	XNX mV					XNX EC	XNX IR	
Sensors Supported	MPD Flammable Catalytic	MPD Flammable Infrared (Flam and CO_2)	Sensepoint HT (High Temperature)	Sensepoint PPM	Model 705 HT (High Temperature)	XNX Toxic and Oxygen Sensors	Searchpoint Optima Plus	Searchline Excel
Product Image								

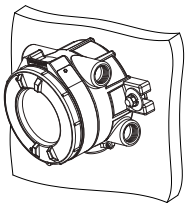
Mechanical Installation Options



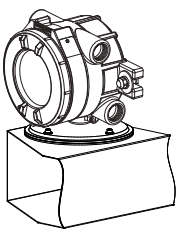
Vertical or Horizontal Pipe Mounted (Using Optional Pipe Mounting Bracket)



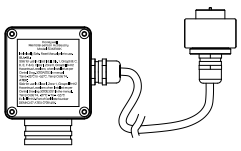
Ceiling Mount



Surface Mounted



Duct Mounted



Optional remote sensor mounting kit for XNX EC sensor

Note: Other sensor accessories available dependent on sensor type. Contact Honeywell Analytics for further details.

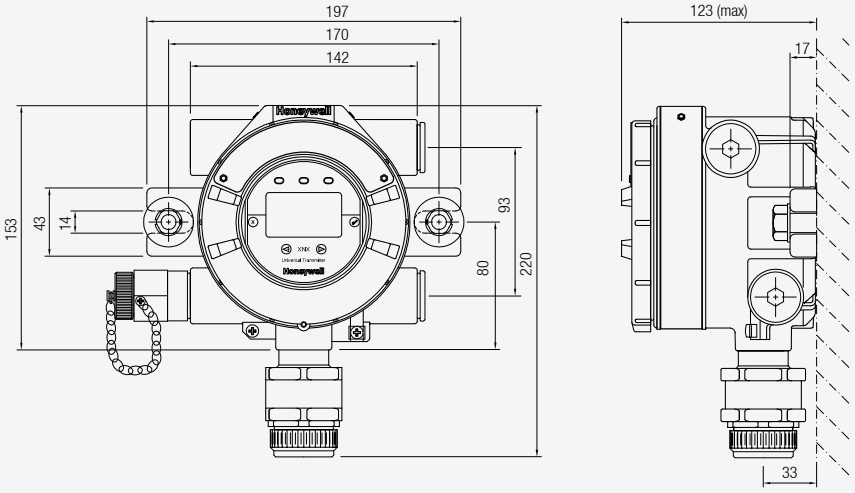
Installation

Outline Installation Dimensions

XNX has two integral mounting lugs on the transmitter body. The transmitter may be fixed directly to a surface, or to a horizontal or vertical pipe/ structure, Ø100-150mm (Ø4 to 6") using a U bolt and pipe mounting bracket. Below are surface mounted outline installation dimensions for the different XNX configurations.

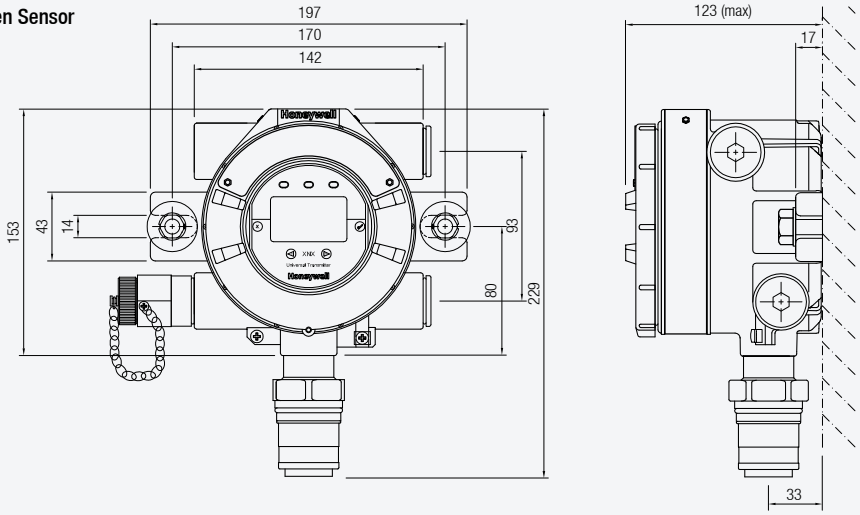
Note: All dimensions are typical and are in millimeters. There are small differences in size between the aluminium version (shown) and stainless steel version. This does not effect the location of the mounting holes.

XNX with MPD Sensor

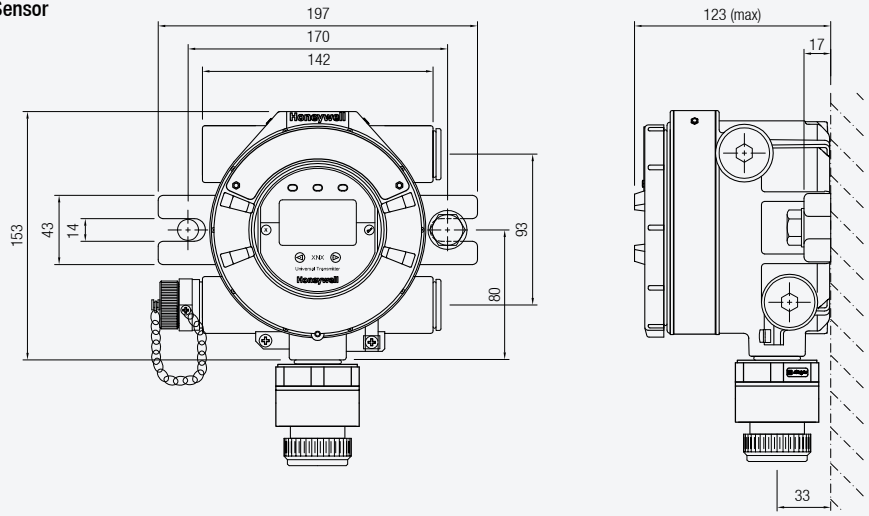


Note: When fitting the Storm Baffle accessory (2108B0280) to the Searchpoint Optima Plus, please use the Fitting Kit (2108B0270).

XNX with EC Toxic and Oxygen Sensor



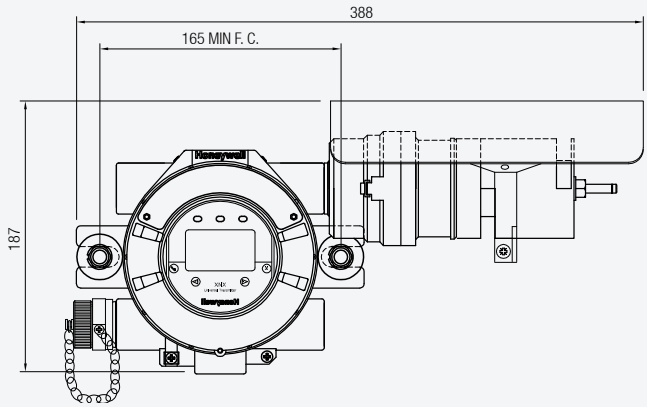
XNX with Sensepoint PPM Sensor

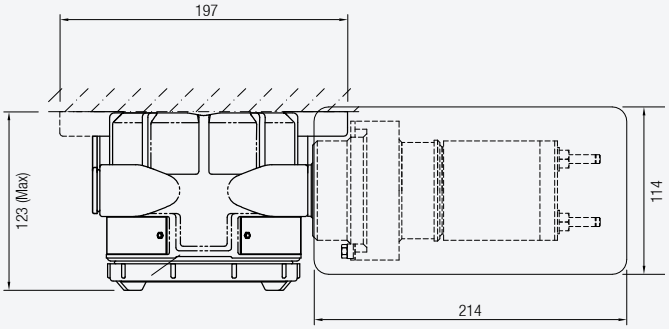


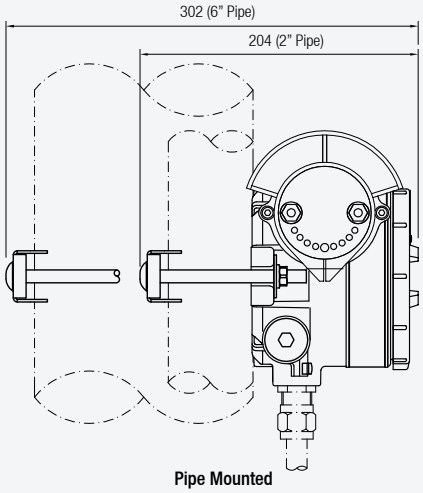
Installation

Outline Installation Dimensions

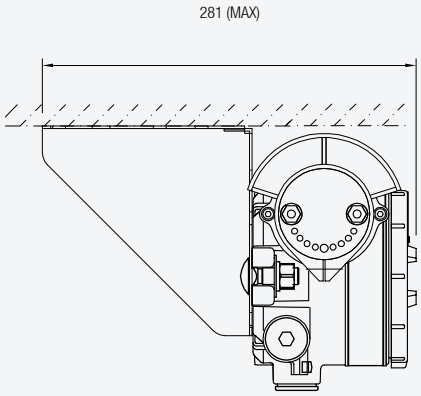
XNX IR with Searchpoint Optima Plus





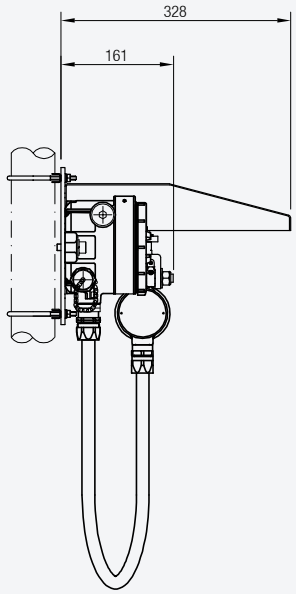


Pipe Mounted

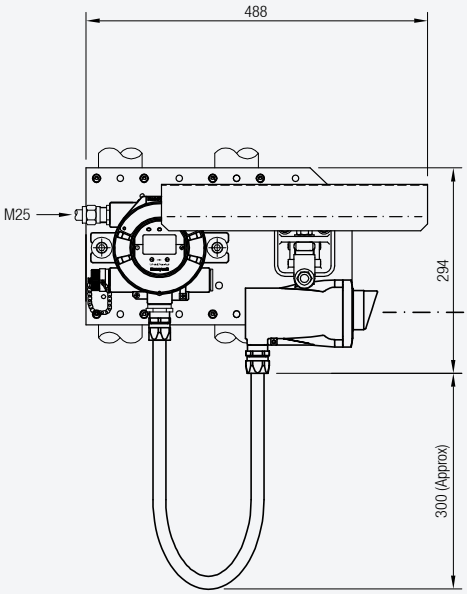


Ceiling Mounted

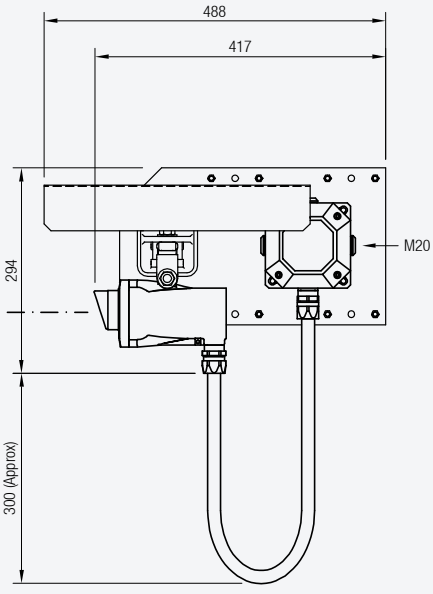
XNX IR with Searchline Excel



Pipe Mounted



Pipe Mounted



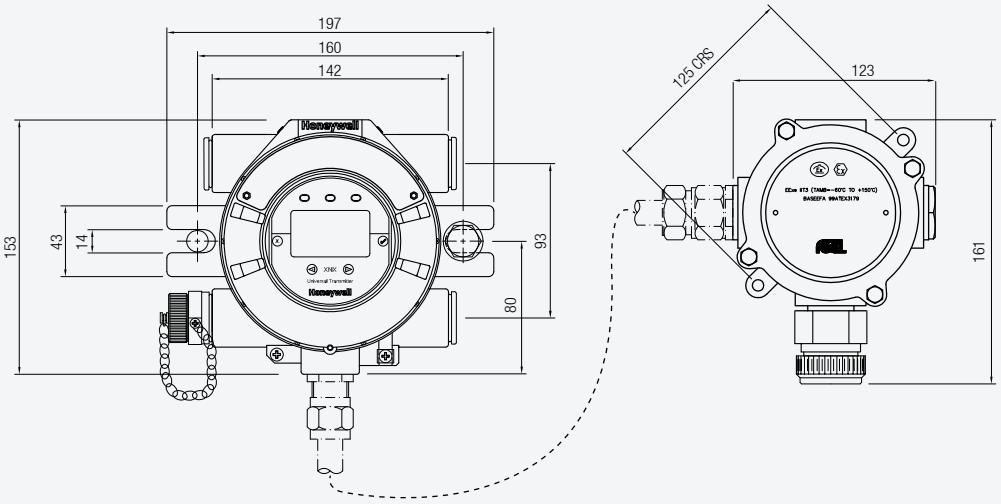
Surface Mounted

5 - 40m
Open Path Range

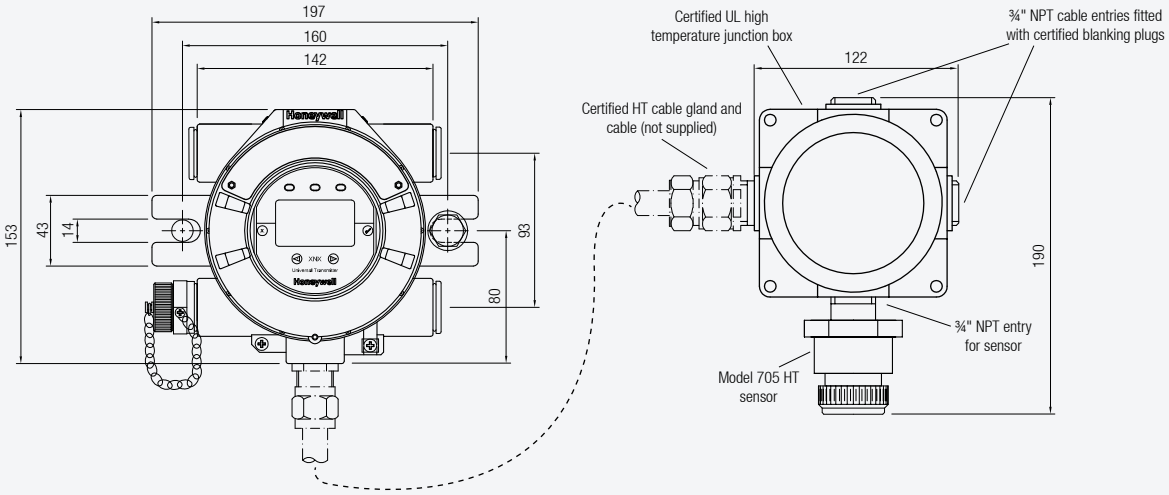
Installation

Outline Installation Dimensions

XNX with Remote Sensepoint HT and Feel Junction Box

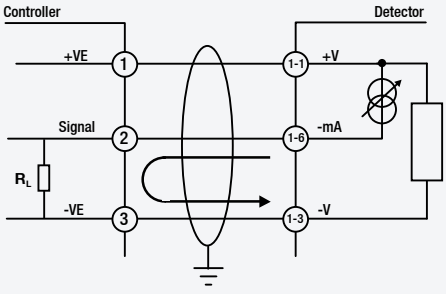


XNX with Remote Sensepoint Model 705 HT and Junction Box

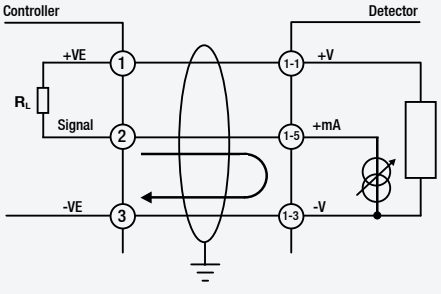


Wiring Schematics

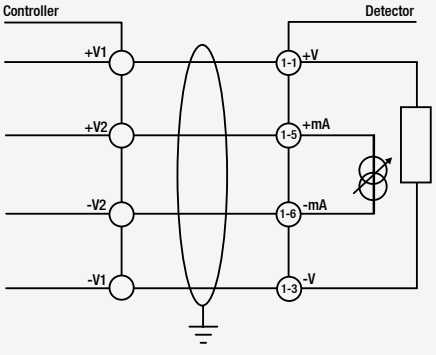
The XNX transmitter may be configured current source, sink or isolated. These options are offered to allow greater flexibility in the type of control system that it can be used with. Source/sink/isolated is selectable via the switch located on the back side of the POD.



XNX Source Configuration



XNX Sink Configuration



XNX Isolated Configuration

Note: Terminate cable screen at the detector or the controller, not both.

Electrical

Electrical

XNX is designed for use in potentially explosive atmospheres. As such, installation should follow national guidelines using suitable mechanically protected cable and glands (M25 or ¾" NPT) or conduit. Use 0.5mm² (20AWG) to 2.5mm² (~13AWG) cross sectional area cable as needed to ensure minimum operating voltage at the detector, depending on installed cable length. Five M25 (ATEX/IECEx certified version) or ¾"NPT entries (UL/CSA version) are provided. Entries are also used for either locally mounting a sensor or for accepting the cable/conduit from a remotely mounted sensor.

Typical Maximum Cable Lengths

The maximum cable length between a controller and detector is dependent upon:

- The minimum guaranteed supply voltage from the controller
- The minimum operating voltage of the detector
- The maximum current draw of the detector
- The input impedance of the controller
- The resistance of the cable

The typical maximum cable length table (right) is for an XNX mV with an MPD catalytic sensor or an XNX EC with an XNX EC sensor fitted. It also assumes a single transmitter being powered from a PSU. Refer to the manual for examples of other variants and cable topology.

Cable Size	Max Cable Distance Meters (Feet)
1.0mm² (18AWG*)	347m (1140')
1.5mm² (16AWG*)	551m (1810')
2.0mm² (14 AWG*)	880m (2890')
2.5mm² (12AWG*)	1408m (4620')

*nearest equivalent

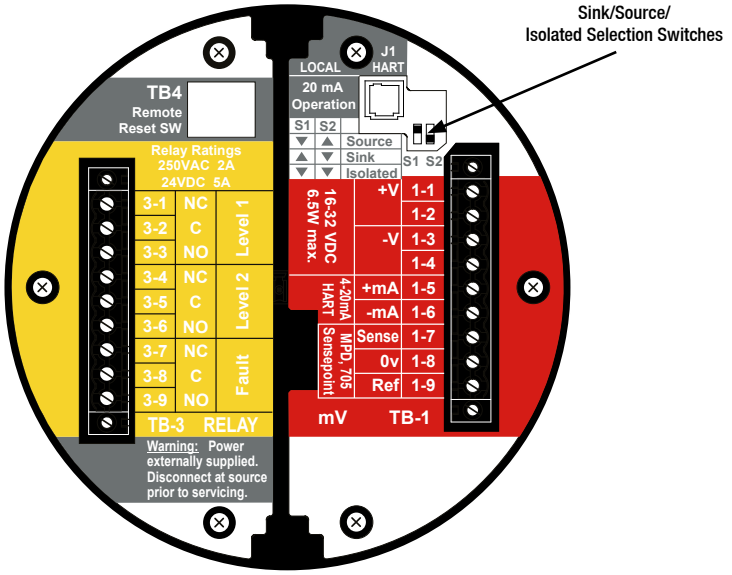
Terminals on POD Module

All sensor connections and option module connections are made at the terminal blocks mounted on the rear of the removable POD module.
The terminals provided are dependent on which of the three basic personalities have been selected plus the options selected.

The tables below show the different terminal connections for each of the available POD personality boards and options boards.

	S1	S2
Source	Down	Up
Sink	UP	Down
Isolated	Down	Down

Example mV POD with Relay Option



Options Boards						
Terminal	**Relay**		**Modbus RTU**		**Foundation Fieldbus**	
TB3	**Marking**	**Connection**	**Marking**	**Connection**	**Marking**	**Connection**
3-1	NC	Alarm 1 Normally Closed	+	Power In +	F+	FF Data In +
3-2	C	Alarm 1 Common	+	Power Out +	F+	FF Data Out +
3-3	NO	Alarm 1 Normally Open	-	Power In -	F-	FF Data In -
3-4	NC	Alarm 2 Normally Closed	-	Power Out -	F-	FF Data Out -
3-5	C	Alarm 2 Common	A	Modbus A In	FS	FF Shield In
3-6	NO	Alarm 2 Normally Open	A	Modbus A Out	SS	FF Shield Out
3-7	NC	Fault Normally Closed	B	Modbus B In		
3-8	C	Fault Common	B	Modbus B Out		
3-9	NO	Fault Normally Open	S	Modbus Drain In		
3-10	-	-	S	Modbus Drain Out		
TB4	**Marking**	**Connection**				
		Remote reset switch				
		Remote reset switch				

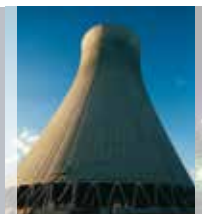
Personality Boards				
Terminal	**Marking**			**Connection**
TB1	**EC**	**mV**	**IR**	
1-1	+V	+V	+V	+VE Supply (18-32VDC)
1-2	+V	+V	+V	+VE Supply (18-32VDC)*
1-3	-V	-V	-V	-VE supply (0VDC)
1-4	-V	-V	-V	-VE supply (0VDC)*
1-5	+mA	+mA	+mA	Current & HART output 4-20mA +
1-6	-mA	-mA	-mA	Current & HART output 4-20mA -
1-7	-	Sense	+Ir	Sensor Connection
1-8	-	0V	-Ir	Sensor Connection
1-9	-	Ref	Sig	Sensor Connection
TB2	**EC**	**mV**	**IR**	
2-1	-	-	Com A	Optima/Excel Modbus A Comms
2-2	-	-	Com B	Optima/Excel Modbus B Comms

*Terminal block jumper required

Technical Summary

XNX Transmitter	
Use	High specification universal transmitter for use with a wide range of Honeywell Analytics local or remote gas detectors for the detection of flammable, toxic and Oxygen gas hazards. Suitable for use in Zone 1 and 2 or Zone 21 and 22 hazardous areas, and North American Class I and II Division 1 or 2 areas.
Construction	
Material	Housing: 5-coat marine finish painted aluminium alloy or 316 stainless steel
Weight (Approx.)	Aluminium alloy: 2.8kg (6.2lbs). 316 stainless steel: 5kg (11lbs)
Mounting	Surface mount via integral mounting lugs. Optional pipe mounting kit suitable for Ø100mm to 150mm (Ø4" to 6") pipe. Optional ceiling mounting bracket
Entries	5 conduit/cable entries (2 right, 2 left, 1 bottom). Entry size M25 for ATEX/IECEx versions or ¾"NPT for UL/CSA certified versions
Dimensions	160mm x 197mm x 114mm (6.1" x 7.8" x 4.5")
Environmental	
IP Rating	IP66 in accordance with EN60529:1992. NEMA 4X
Operating Temperature	-40ºC to +65ºC (-40ºF to +149ºF)
Operating Humidity	0-99%RH (non condensing)
Operating Pressure	90-110kPa
Storage Conditions	-40ºC to 75ºC (-40ºF to 167ºF), 0-99% non-condensing
Electrical	
Input Voltage Range	EC and mV versions 16 to 32Vdc, IR version 18 to 32 Vdc (24Vdc nominal)
Max Power Consumption	XNX EC (Toxic): 6.2 watts XNX mV (Catalytic or IR cell): 6.5 watts XNX IR with Searchpoint Optima Plus: 9.7 watts XNX IR with Searchline Excel Receiver: 13.2 watts
Current Output	Fully configurable isolated 4-20mA & HART® output module providing current sink, current source and isolated modes of operation (supports HART® 6.0 protocol) supplied as standard **Default current output settings:** / **HART® mode:** ≥0.0<1.0mA — Fault — 3mA Fault/Warning 4.0 mA to 20.0mA — Normal gas measurement — 4-20mA Normal gas measurement 2.0 mA or 4.0 mA (17.4mA) — Inhibit (during configuration/user settings) — 22.0mA Maximum over range The available output range for Inhibit, Warning, Beam Blocked and Low Signal is from 1 to 4mA. For an over range condition, the range is 20 to 22mA
4-20mA Signal Accuracy	+/-1% Full Scale
Functions Supported by HART®	Gas reading Gas name and units of measurement 4-20mA signal level General/device information Installation Configuration Forcing of 4-20mA output Detailed sensor information including: Optical signal level Dynamic reserve (Searchline Excel only) Raw reading 24V supply voltage Temperature Calibration and configuration status Detailed fault and warning information Fault and alarm history Zero calibration
Terminals	Cage style pluggable with retaining screws for wire diameter 0.5mm² to 2.5mm² (approx. 20AWG to 14AWG)
Certification	
European	ATEX: ⟨Ex⟩ II 2 (1) G Ex d [ia IIC Ga] IIC T4/T6 Gb ⟨Ex⟩ II 2 (1) D Ex tb [ia IIIC Da] IIIC T85 Db
International	IECEx: Ex d [ia IIC Ga] IIC T4/T6 Gb Ex tb [ia IIIC Da] IIIC T85 Db
North American	UL: Class I, Div 1, Groups A, B, C, and D; Class II, Div. 1 Groups F & G / Class 1, Zone 1 Groups IIB + H2; Class II, Zone 20 & 21 FM: AEx D [ia IIC] IIB + H2 T6 -40°C ≤Tamb ≤65°C
Canadian	CSA: Class I, Div 1, Groups B, C, and D; Class II, Div. 1 Groups F & G / Class I, Zone 1 Groups IIB + H2
EMC	EN50270:2006 EN61000-6-4:2007
Performance	Europe – ATEX, EN45544, EN50104, EN50271:2010, EN13980, EN60079-29-1 North America – UL 913, UL 1203, CSA 22.2 No. 152 IEC61508 (SIL Assessment, SIL 2), IECEx OD 005
Local IS HART® Port (Optional)	
Description	Provides externally accessible IS connections to the XNX transmitter to enable 'hot' connection of HC275/375 HART® or equivalent hand held configurator
Installation	Fitted to one of the cable entries on the XNX transmitter. Option can be factory fitted or in the field by a qualified service engineer
Environmental Protection	Port protected by cover to IP66/67 when not in use
Relay Module (Optional)	
Description	Provides three fully user configurable relay outputs that can be switched based on the current gas level and/or status of the transmitter. Provides 2 x SPCO alarm and 1 x SPCO fault relay. Mutually exclusive with Modbus and/or Foundation Fieldbus™ options
Rating	Maximum: 240VAC, 5A (non inductive load) Minimum: 5V, 10mA (non inductive load)
Installation	Option can be factory installed in display module or in the field by a qualified service engineer

Technical Summary



Foundation Fieldbus™ Module (Optional)

Description	Foundation Fieldbus™ output for connection to a multi-drop H1 network. Mutually exclusive with relays and/or Modbus options		
Installation	Option can be factory installed in display module or in the field by a qualified service engineer		
Connections	Sig+, Sig- and Screen		
Physical Layer	Conforms to IEC 1158-2 and ISA 50.02, 31.25Kbits/s		
Maximum No. of Nodes	32		
Functions Supported	Gas reading Gas name and units of measurement Instrument status (OK, warning, fault, over-range) General/Device Information Remote zero and span calibration (detector dependent)	Detailed sensor information Including: Optical Signal Level Dynamic reserve (Searchline Excel only) Raw reading 24V supply voltage Temperature Calibration and configuration status	Detailed Fault and Warning Information: Fault and alarm history Zero calibration

Modbus RTU Module (Optional)

Description	The Modbus output module provides an isolated RS485 output to enable the connection of the XNX transmitter to a multi-drop Modbus network. Mutually exclusive with relays and/or Foundation Fieldbus™ options
Installation	Option factory installed in display module or in the field by a qualified service engineer
Connections	RS485+, RS485-, Drain
Physical Layer	Isolated RS485, 1200 to 19.2K baud
Maximum No. of Nodes	254 XNX compatible transmitters only
Protocol	Modbus RTU
Functions Supported	As per Foundation Fieldbus™ Module (Optional) - see above

XNX EC Sensor

Gas		Cartridge P/N	Selectable Full Scale Range	Default Range	Lower Detectable Limit	Steps	Selectable Cal Gas Range	Default Cal Point	Response Time (T50) sec	Response Time (T90) sec	Accuracy*	Operating Temperature	
												Min	Max
O_2	Oxygen	XNXXSO1SS	n/a	25.0 %Vol	3.5 %Vol	n/a	20.9 %Vol (Fixed)	20.9 %Vol	T20 <10	<30	<+/-0.6 %Vol	-30°C / -34°F	55°C / 131°F
H_2S (LoLo)	Hydrogen Sulphide	XNXXSH3SS	n/a	15.0ppm	1.0ppm	n/a	30 to 70% of selected full scale range	10ppm	<20	<40	<+/-0.3ppm	-40°C / -40°F	55°C / 131°F**
H_2S (Lo)	Hydrogen Sulphide	XNXXSH1SS	10.0 to 50.0ppm	15.0ppm	1.0ppm	0.1ppm		10ppm	<20	<30	<+/-0.3ppm	-40°C / -40°F	55°C / 131°F**
H_2S (Hi)	Hydrogen Sulphide	XNXXSH2SS	50 to 500ppm	100ppm	1ppm	10ppm		50ppm	<20	<30	<+/-5ppm	-40°C / -40°F	55°C / 131°F**
CO	Carbon Monoxide	XNXXSC1SS	100 to 500ppm	300ppm	5ppm	100ppm		100ppm	<15	<30	<+/-2ppm	-40°C / -40°F	55°C / 131°F**
SO_2 (Lo)	Sulphur Dioxide	XNXXSS1SS	5.0 to 20.0ppm	15.0ppm	0.6ppm	5.0ppm		5.0ppm	<15	<30	<+/-0.3ppm	-40°C / -40°F	55°C / 131°F**
SO_2 (Hi)	Sulphur Dioxide	XNXXSS2SS	20.0 to 50.0ppm	50.0ppm	1.5ppm	10.0ppm		25ppm	<15	<30	<+/-0.6ppm	-40°C / -40°F	55°C / 131°F**
NH_3 (Lo)	Ammonia	XNXXSA1SS	50 to 200ppm	200ppm	6ppm	50ppm		100ppm	<60	<180	<+/-4ppm	-20°C / -4°F	40°C / 104°F
NH_3 (Hi)	Ammonia	XNXXSA2SS	200 to 1,000ppm	1,000ppm	30ppm	50ppm		300ppm	<60	<180	<+/-20ppm	-20°C / -4°F	40°C / 104°F
CL_2 (Lo)	Chlorine	XNXXSL2SS	n/a	5.00ppm	0.15ppm	n/a		2.0ppm	<20	<60	<+/-0.2ppm	-10°C / 14°F	55°C / 131°F
CL_2 (Hi)	Chlorine	XNXXSL1SS	5.0 to 20.0ppm	5.0ppm	0.6ppm	5.0ppm		2.0ppm	<20	<30	<+/-0.2ppm	-10°C / 14°F	55°C / 131°F
ClO_2	Chlorine Dioxide	XNXXSX1SS	n/a	1.00ppm	0.03ppm	n/a		0.5ppm	<30	<120	<+/-0.03ppm	-20°C / -4°F	55°C / 131°F
NO	Nitrogen Monoxide	XNXXSM1SS	n/a	100ppm	3ppm	n/a		50ppm	<15	<30	<+/-2ppm	-20°C / -4°F	55°C / 131°F
NO_2	Nitrogen Dioxide	XNXXSN1SS	5.0 to 50.0ppm	10.0ppm	1.5ppm	5.0ppm		5ppm	<15	<30	<+/-0.2ppm	-20°C / -4°F	55°C / 131°F
H_2 (Lo)	Hydrogen	XNXXSG1SS	n/a	1,000ppm	30ppm	n/a		500ppm	<60	<90**	<+/-8ppm	-20°C / -4°F	55°C / 131°F
H_2 (Hi)	Hydrogen	XNXXSG2SS	n/a	10,000ppm	300ppm	n/a		5000ppm	<15	<30	<+/-150ppm	-20°C / -4°F	55°C / 131°F
HF	Hydrogen Fluoride	**XNXXSF1SS**	n/a	**12.0ppm**	**0.4ppm**	n/a		**5.0ppm**	**120**	**<240**	**<+/-0.5ppm**	**-20°C / -4°F**	**55°C / 131°F**
PH_3	Phosphine	**XNXXSP1SS**	n/a	**1.20 ppm**	**0.04ppm**	n/a		**0.5ppm**	**<15**	**<30**	**<+/- 0.02ppm**	**-20°C / -4°F**	**40°C / 104°F**
HCN	**Hydrogen Cyanide**	**XNXXSY1SS**	**n/a**	**30.0ppm**	**1.0ppm**	n/a		**10.0ppm**	**<35**	**<200**	**0.4ppm**	**-20°C / -4°F**	**55°C / 131°F**
F_2	Fluorine	**XNXXSU1SS**	n/a	**4.00ppm**	**0.36ppm**	n/a		**2.00ppm**	**<5**	**<30**	**0.03ppm**	**-20°C / -4°F**	**55°C / 131°F**
O_3	Ozone	**XNXXSZ1SS**	n/a	**0.400ppm**	**0.032ppm**	n/a		**0.200ppm**	**<15**	**<60**	**0.003ppm**	**-20°C / -4°F**	**55°C / 131°F**
ETO	Ethylene Oxide	**XNXXSE1SS**	20.0 to 50.0ppm	**25.0ppm**	**1.0ppm**	5.0ppm		**10.0ppm**	**<40**	**<125**	**0.3ppm**	**-20°C / -4°F**	**55°C / 131°F**

XNX Multi Purpose Detector (MPD)

Sensor Type	Target Gas	User Selectable Full Scale Range	Default Range	Steps	User Selectable Cal Gas Range	Primary Cal Gas	Default Cal Point	Response Time (T90) secs	Accuracy	Operating Temperature	
										Min	Max
IR CO2	Carbon Dioxide	1.00 to 5.00%Vol	5.00%Vol	1.00%Vol	1.50 to 3.5%Vol	Carbon Dioxide	2.5%Vol	<60	±5% of FS	-20°C/-4°F	+50°C/+122°F
IR CH4	Methane	1.00 to 5.00%Vol	5.00%Vol	1.00%Vol	1.50 to 3.5%Vol	Methane	2.5%Vol	<30	±5% of FS	-20°C/-4°F	+50°C/+122°F
		20 to 100%LEL	100%LEL	10%LEL	30 to 70%LEL		50%LEL		±5% of FS		
IR HC	Hydrocarbons#	20 to 100%LEL	100%LEL	10%LEL	30 to 70%LEL	Propane	50%LEL	<30	±5% of FS	-20°C/-4°F	+50°C/+122°F
Catalytic	Flammables	20 to 100%LEL	100%LEL	10%LEL	30 to 70%LEL	Methane	50%LEL	<30	±5% of FS	-40°C/-40°F	+65°C/+149°F

NOTES

Data taken at ambient conditions of 20°C, 50% RH. Data represents typical values of freshly calibrated sensors without optional accessories attached. *Accuracy at 10% of default full scale (typical A1 alarm) of applied gas, or minimum (whichever is greater). Measured using calibration flow housing at calibration flow rate. Performance figures are applicable between 10 and 90% of full scale. Performance figures are measured by test units calibrated at 50% of full scale. Contact Honeywell Analytics for any additional data or details. **Accuracy for operation between -20°C and -40°C is +/-30% of applied. Operation at these temperatures continuously (exceeding 12 hours) may cause deterioration in sensor performance and shorten sensor life.

#Propane sensor with linear cross reference for Ethylene, n Butane and n Pentane.

Contact Honeywell Analytics for any additional data or details.

Ordering Information

Ordering Information

Standard Supply: The XNX universal transmitter is supplied complete with integral wall mounting lugs, 5 x M25 cable entries (ATEX/IECEx) or 5 x 3/4" NPT conduit entries (UL/CSA), Magnetic wand/ screwdriver, Allen key, 3 x blanking plugs, quick start guide and manual CD. MPD or XNX EC sensors and cartridges are supplied fitted to the bottom entry if ordered. Other sensors are supplied separately. Default settings are configured according to specified personality type (mV, EC or IR) and selected output options.

XNX- [ ] [ ] [ ] [ ] - [ ] [ ] [ ] [ ] [ ]

Approval

A	ATEX/IEC
U	UL- CSA

Entry Type

M	M25
T	¾"NPT

Material

A	Aluminium
S	316 Stainless Steel

Personality

E c	Interface for Electro-chemical Cartridges (Includes IS Barrier and Adaptor) For use with XNX Toxic and Oxygen Sensors
I r	Interface for infrared Products Use with Searchline Excel, Searchpoint Optima and Generic 4-20mA inputs
m V	Interface for milli-Volt sensors For use with MPD, Sensepoint (and Model 705) HT and PPM Sensors

Option

N	No Option installed
R	Relay Option
M	Modbus Option
F	Foundation Fieldbus™ Option

Local HART

N	No Option installed
H	Local Hart

Sensor and Range

Specifies the MPD sensor	
NNN	None
CB1	Catalytic Bead
IF1	IR Hydrocarbons (0-100%LEL Propane)
IV1	IR 0-100%LEL (or 0-5%Vol.) Methane
IC1	IR Carbon Dioxide 0-5%Vol.

Example part number:

XNX-AMSV-NNCB1

XNX transmitter with HART® over 4-20mA output
ATEX/IEC approved
5 x M25 entries
painted 316 stainless steel
mV version
no output options
no local HART
Including MPD sensor. catalytic sensor 0-100%LEL.

NOTES

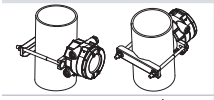
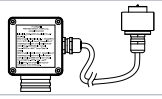
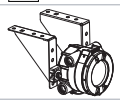
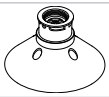
Certain combinations not available e.g. ATEX with ¾" NPT entries. Check price list for valid configurations.

Order sensors other than MPD separately and select'NNN' for sensor and range.

Shipping Details

Shipping Carton	L370mm (14.6") x W280mm (11") x D180mm (7.1").
Packed weight (Approx.)	Aluminium version 4.4kg (9.7lbs), stainless steel version 6.8kg (15lbs)

Optional Accessories

	**Pipe Mount Kit**	1226A0358		For use on pipes from 50-100mm (2-6 inches) in diameter. The kit includes: Pipe mount bracket, (2) carriage bolts, nuts and lock washers.
	**Remote EC Sensor Mounting Kit**	S3KRMK		The remote sensor mounting kit (S3KRMK) allows the XNX EC sensors to be remotely mounted via an IS cable kit, up to 15 meters (50 feet) from the transmitter. The kit includes 15 meters of shielded cable, cable glands and remote terminal box. The cable can be cut to the required length and terminated at the remote terminal box.
	**Ceiling Mount Bracket Kit**	1226A0355		The optional ceiling mount bracket kit allows XNX to be mounted to a ceiling. The kit includes: (2) stainless steel ceiling mount brackets, bolts and nuts.
	**Duct Mount Kit**	S3KDMK		The duct mounting kit (S3KDMK) can be used with the EC sensor to allow detection of flammable O_2, CO, H_2 and H_2S gasses in ducts. When combined with the MPD interface adapter (1226A0382), the duct mounting kit can accommodate the MPD to detect flammable gases in a duct application. The duct mount kit includes the adapter, gasket and required fasteners. The MPD interface adapter includes only the adapter and requires the S3KDMK duct mount kit.
	MPD Interface Adapter	1226A0382		
	**Calibration Gas Flow Adapter**	S3KCAL	XNX EC	The calibration gas flow adapter is used to apply calibration test gas to the sensor. It push fills onto the bottom of the sensor and can be fitted without removing the weatherproof cover.
		1226A0411	MPD	
		02000-A-1645	Sensepoint	
		00780-A-0035	705	
	**Weatherproof Cap**	Included	XNX EC	The weatherproof cap protects the XNX sensors from harsh weather.
		02000-A-1640	MPD	
		02000-A-1640	Sensepoint	
		00780-A-2076	705	
	**Collecting Cone**	SPPPCC	XNX EC	The collecting cone improves detection of lighter-than-air gasses such as Hydrogen and Methane.
		02000-A-1642	MPD	
		02000-A-1642	Sensepoint	
		02000-A-1642	705	
	**Remote Gassing Kit**	1226A0354		The remote gassing kit enables gas to be applied remotely for performing functional response checks. Kit includes 50' Teflon® tubing, mounting bracket, tube cap and device adapters in ¼" and ⅛" ID to attach to bump test ports on the weatherproof cap of your device.

Honeywell Analytics Gas Detection

Honeywell Analytics is able to provide gas detection solutions to meet the requirements of all applications and industries. Contact us in the following ways:

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Honeywell Analytics
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Honeywell

Series 3000 MkII and MkIII

Honeywell

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

Series 3000 MkII and MkIII

Reliable detection
- Proven electrochemical sensing technology
- Uses Surecell™ electrochemical cells, ideal for hot and humid environments
- Long-life sensing elements
- Patented 'Reflex' sensing element verification diagnostics

Reduced installation costs
- Integral surface mounting lugs
- Optional horizontal or vertical pipe mounting bracket
- Flameproof transmitter allows field wiring to be run along with other non-IS instruments
- Plug-in sensor removes wiring
- Can be retrofitted in place of Series 2000

Reduced commissioning costs
- Sensor recognition feature auto configures transmitter
- Non-intrusive configuration
- Plug and play factory configured sensors

Reduced maintenance costs
- IS sensor connection permits hot swap, reducing downtime
- User programmable calibration frequency
- Integral fault diagnostic software
- Menu/icon driven calibration procedure

Regulatory compliance
- European (ATEX)
- US (UL)
- Canadian (c-UL)
- South America (Inmetro)
- International (IECEx)

Range of optional accessories
- Remote sensor mounting kit
- Duct mounting kit (for H_2, CO and H_2S only)
- Calibration cup to apply test gas
- Collecting cone

Typical applications
- Exploration and drilling platform
- Production platforms
- Onshore oil and gas terminals
- Refineries and chemical plants
- Power plants
- Waste water facilities
- Utilities

The Series 3000 range of transmitters provide comprehensive monitoring of toxic and Oxygen gas hazards in potentially explosive atmospheres. Suitable for mounting both indoors and out, they two versions and offer excellent versatili contained in a flameproof housing, has an intrinsically saf sensor connection and is for use in predominantly Zon applications. However with the use of the optional remote mounting kit the sensor of the MkII can be mounted in a Zone 0 environment. The MkIII is for use with a separate suitable IS barrier allowing the complete transmitter t used in Zone 0 applications.

These low powered gas detectors all feature a loop powered 4-20 mA connection, making them ideal for both new and retrofit installations. Users can configure the detector through the use of the easy and intuitive interface while fault diagnostic software and a programmable calibration period greatly simplify maintenance procedures.

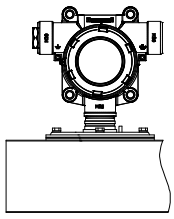
The intrinsically safe smart sensors are supplied pre-configured and can be 'hot swapped' without having to remove power to the detector, saving time and money during commissioning and routine servicing. A remote sensor mounting kit is available that allows the sensor to be mounted up to 15m (50ft) from the transmitter, making it ideal for operation in areas that are difficult to access.

Series 3000 is supplied with all necessary accessories for easy installation. The detector can be wall mounted using the integral mounting lugs or pipe mounted (horizontal or vertical) using the optional pipe mounting kit. Electrical installation is made using the 2 x M20 cable entries (ATEX/IECEx version) or 2 x ¾"NPT conduit entries (UL/c-UL versions). A suitable blanking plug is also supplied to seal any unused entries. A weatherproof cap is included for use in the harshest outdoor conditions.

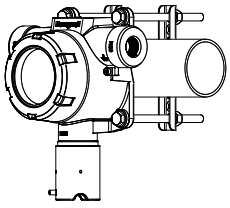
Installation

Mechanical Installation Options

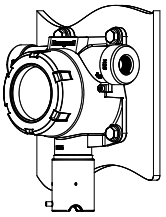
Series 3000 MkII and MkIII are designed for use in potentially explosive atmospheres. As such, installation should follow national guidelines using suitable mechanically protected cable and glands (M20 or ¾" NPT) or conduit (¾" NPT). Use 0.5mm² (20AWG) to 2.0mm² (~14AWG) cross sectional area cable as needed to ensure minimum operating voltage at the detector, depending on installed cable length. Various accessories are available for different applications.



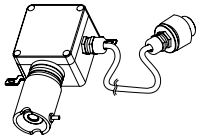
Duct Mount



Pipe Mounting

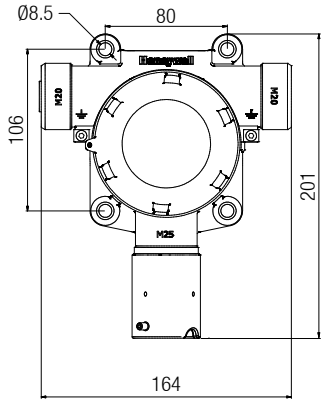


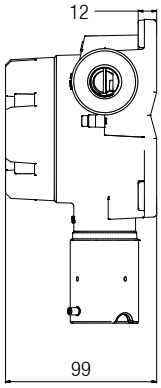
Wall Mount



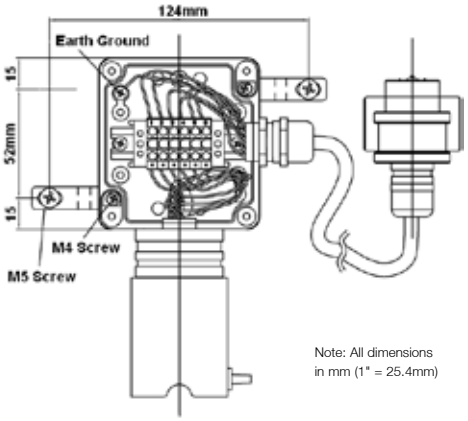
Remote Mounting

Dimensions





Remote Mounting Arrangement



Note: All dimensions in mm (1" = 25.4mm)

Wiring Schematics Series 3000 MkII

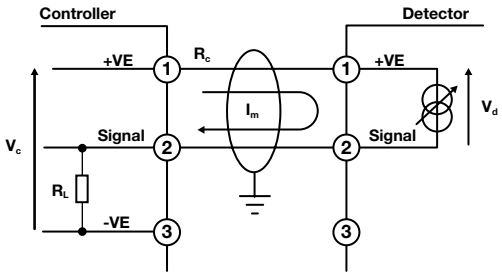
Detector supply V_d
- 17Vdc (min) to 32Vdc (max)

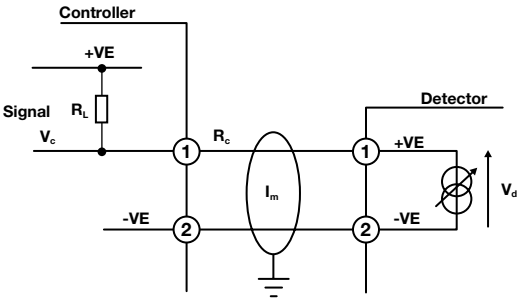
Maximum detector signal I_m
- 22mA (over range)

Cable resistance R_c
- Subject to cable type

Load resistor of control panel R_L
- Assumed 33Ω (min) or 250Ω (max)
- Subject to controller manufacturer

Controller supply voltage V_c
- Subject to controller manufacturer
- Assumed nominal of 24Vdc





Typical Maximum Installed Cable Lengths Series 3000 MkII

The maximum cable length between a controller and detector is dependent upon:

- The minimum guaranteed supply voltage to the detector at the controller (V_C).
- The minimum operating voltage of the detector (V_d)
- The maximum current draw of the detector (I_m)
- The input impedance of the controller (R_L)
- The resistance of the cable (R_C)

Using the example values, the table opposite shows typical cable lengths.

For a specific application, the cable manufacturer's resistance data for a specific cable type must be used.

A cable length calculation formula can be found in the product technical manual.

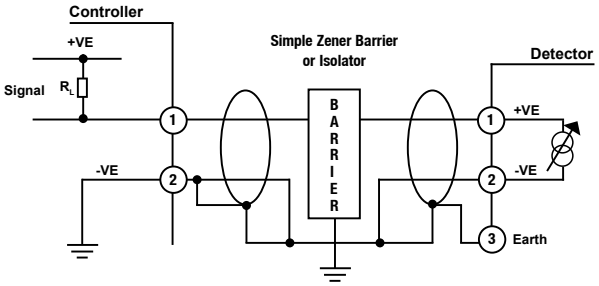
Series 3000 MkII Maximum Cable Length shown in km (mi)

Cable Size	Cable Resistance R_c Ω/km (Ω/mi)	Cable distance km (mi) where the Input Impedance R_L = 33Ω	Cable distance km (mi) where the Input Impedance R_L = 250Ω
0.5mm² (20AWG*)	36.8 (59.2)	3.9 (2.4)	0.9 (0.6)
1.0mm² (17AWG*)	19.5 (31.4)	7.3 (4.5)	1.7 (1.1)
1.5mm² (16AWG*)	12.7 (20.4)	11.2 (7.0)	2.7 (1.7)
2.0mm² (14AWG*)	10.1 (16.3)	14.1 (8.8)	3.4 (2.1)

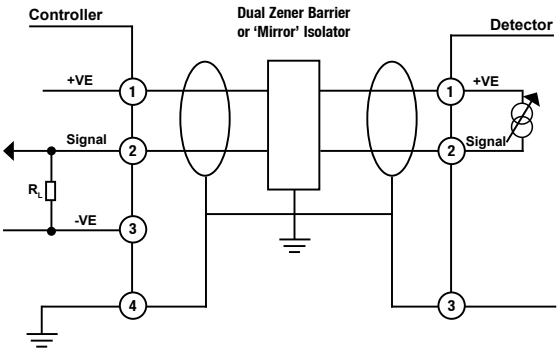
*Nearest equivalent

Installation

Wiring Schematics Series 3000 MkIII



Single Barrier Schematic



Dual Barrier Schematic

Series 3000 MkIII Cable Length

The limiting factors in calculating maximum cable lengths when using barriers and isolators are the total capacitance and inductance. Barriers and isolators have a fixed amount of capacitance and inductance that can be connected to their outputs. The cable between the field device and barrier/isolator will have a value for capacitance and inductance per metre or kilometre that will be available from the manufacturer or supplier.

To calculate the maximum cable lengths, calculate the total capacitance and inductance for the length of cable, add any capacitance or inductance due to the field device (in the case of Series 3000 MkIII capacitance and inductance = 0). The resulting totals should not be greater than the value shown for the barrier or isolator.

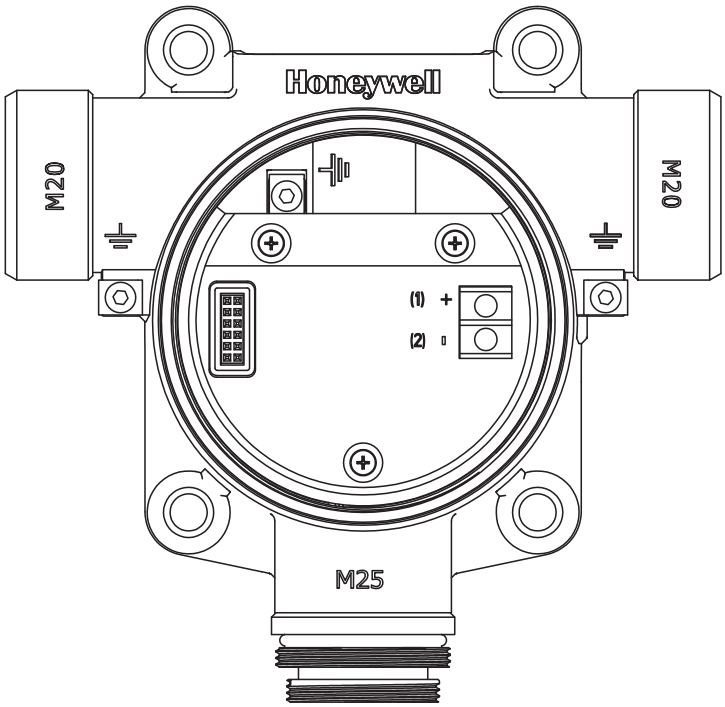
Suggested barriers and isolators Series 3000 MkIII

Listed below are some suggested barriers and isolators for use with Series 3000 MkIII.

MTL7728+ (single channel zener barrier)
MTL7787+ (2-channel zener barrier)
MTL5042 (Galvanic Isolator)
Pepperl+Fuchs KFD2-STC4-EX1 (Galvanic Isolator)

Note: It is up to the user to ensure that the barrier or isolator used is suitable for their application.

Electrical Connections



Terminal Number	Detector Terminal	Controller Connection
1	+	+VE
2	-	Signal

Technical Summary

Series 3000 MkII and MkIII Detector

Use	Rugged and reliable gas detector for the protection of personnel from toxic and Oxygen gas hazards. MkII version suitable for use in Zone 1, 2, 21 or 22 hazardous areas and North American Class I and II Division 1 or 2 areas. MkIII version suitable for use in Zone 0, 1, 2, 20, 21 or 22 applications.

Detectable Gases

Gas	Formula	Selectable Full Scale Range	Default Range	Operating Temperature**	
				Min	Max
Oxygen	O_2	25.0% / Vol only	25.0%Vol	-30°C / -22°F	55°C / 131°F
Hydrogen Sulphide	H_2S	10.0 to 50.0ppm	15.0ppm	-40°C / -40°F	55°C / 131°F
Hydrogen Sulphide	H_2S	50 to 500ppm	100ppm	-40°C / -40°F	55°C / 131°F
Carbon Monoxide	CO	100 to 500ppm	300ppm	-40°C / -40°F	55°C / 131°F
Sulphur Dioxide	SO_2	5.0 to 20.0ppm	15.0ppm	-40°C / -40°F	55°C / 131°F
Ammonia*	NH_3	50 to 200ppm	200ppm	-20°C / -4°F	40°C / 104°F[1]
Ammonia*	NH_3	200 to 1,000ppm	1,000ppm	-20°C / -4°F	40°C / 104°F
Chlorine	Cl_2	5.0 to 20ppm	5.0ppm	-10°C / 14°F	55°C / 131°F
Chlorine Dioxide	ClO_2	1.00ppm only	1.00ppm	-20°C / -4°F	55°C / 131°F
Nitric Oxide	NO	100ppm only	100ppm	-20°C / -4°F	55°C / 131°F
Nitrogen Dioxide	NO_2	5.0 to 50.0ppm	10ppm	-20°C / -4°F	55°C / 131°F
Hydrogen	H_2	1,000ppm only	1,000ppm	-20°C / -4°F	55°C / 131°F
Hydrogen	H_2	9,999ppm only	9,999ppm	-20°C / -4°F	55°C / 131°F
Hydrogen Chloride	HCl	10.0 to 20.0ppm	10ppm	-20°C / -4°F	40°C / 104°F
Hydrogen Cyanide	HCN	30.0ppm only	30.0ppm	-20°C / -4°F	55°C / 131°F
Hydrogen Fluoride	HF	12.0ppm only	12.0ppm	-20°C / -4°F	55°C / 131°F
Phosphine	PH_3	1.2ppm only	1.2ppm	-20°C / -4°F	40°C / 104°F
Fluorine	F_2	4.00ppm only	4.00ppm	-20°C / -4°F	55°C / 131°F
Ozone	O_3	0.400ppm only	0.400ppm	-20°C / -4°F	55°C / 131°F
Ethylene Oxide	ETO	20.0 to 50.0ppm	25.0ppm	-20°C / -4°F	55°C / 131°F

Electrical

	MkII	MkIII
Connections and Power	2-wire loop powered 17Vdc (±10%) to 32Vdc (max) 22mA max. over range	2 wire loop powered 10Vdc (±10%) to 30Vdc (max) 22mA max. overrange Entity parameters for Barrier Selection: Vmax/Ui = 30Vdc Imax/Ii = 125mA Pmax/Pi = 1.2W Li = 0mH Ci = 0µF
Recommended Cable	2-wire with screen (90% coverage) or conduit 0.5mm² (20AWG) to 2.0mm² (14AWG)	
Signal	0-100% FSD 4-20mA Fault = 3mA Calibration due selectable off or 3mA Max. over range 22mA Inhibit (toxic sensors) = Selectable 3mA or 4mA Inhibit (Oxygen sensors) = Selectable 3mA or 17.4mA	

Construction

Material	Transmitter: Epoxy painted aluminium alloy LM25 or 316 Stainless Steel, Sensor: 316 Stainless Steel with PTFE filter
Maximum Dimensions	164mm x 201mm x 99mm (6.4" x 7.9" x 3.9")
Weight	Aluminium alloy LM25: 1.7kg (3.75lbs.) Stainless Steel 316: 3.7kg (8.16lbs.)

Environmental

IP Rating	IP66 (EN 60529), NEMA 4X
Certified Temperature	ATEX/IECEX: -20°C to +55°C (-4°F to +131°F) (MkIII -40°C to +55°C (-40°F to +131°F)) UL/c-UL: -40°C to +55°C (-40°F to +131°F)
Operating Humidity	Continuous 20-90% RH (non-condensing) Intermittent 0-99% RH (non-condensing)
Operating Pressure	90-110kPa
Storage Conditions	15°C to 30°C (59°F to 86°F), 30-70% RH (non-condensing)

*Suitable for applications without NH_3 ambient background concentrations only.
**When operating in Hazardous Area applications the detector must not be operated outside the certified temperature range. See Certification details for UL, c-UL and ATEX/IECEx certified temperature ranges.

[1] +55°C / 131°F intermittent.

Technical Summary and Ordering Information

Certification

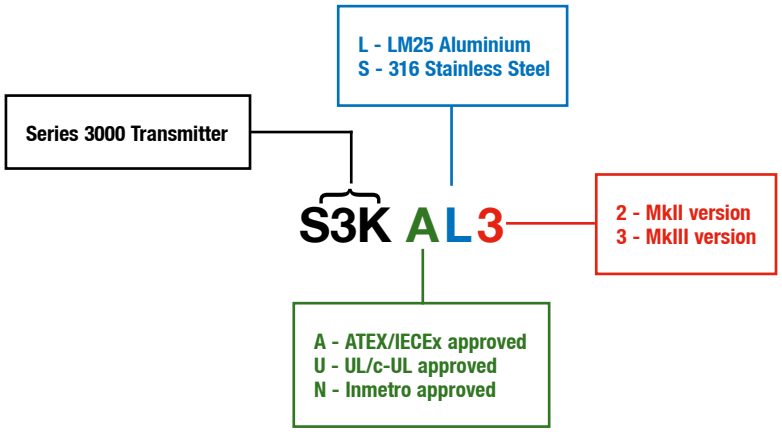
	MkII	MkIII
	Transmitter: UL/c-UL: Class I, Div. 1 & 2, Groups B, C & D; Class II, Div. 1 Groups E, F & G, Class II, Div. 2, Groups F & G; Class I, Zone 1, Group IIB + H2 Hazardous Locations ATEX: ⟨Ex⟩ II 2 (1) GD Ex d [ia IIC Ga] IIB + H2 T4 Gb Ex t [ia IIIC Da] IIIB T135°C Db IECEx: Ex d [ia IIC Ga] IIB + H2 T4 Gb Ex t [ia IIIC Da] IIIB T135°C Db	**Transmitter:** UL/cUL Class I, Divisions 1 & 2, Groups A, B, C & D; Class II, Divisions 1 & 2, Groups E, F & G ATEX: ⟨Ex⟩ II 1 (1) GD Ex ia IIC T4 Ga Ex ia IIIC T135°C Da IECEx: Ex ia IIC T4 Ga Ex ia IIIC T135°C Da
	Remote Sensor Accessory: UL/c-UL: Class I, Division 1, Groups A, B, C and D Class II, Divisions 1 and 2, Groups E, F and G Class 1, Zone 0, Group IIC; Class II, Zone 20 ATEX: ⟨Ex⟩ II 1G D Ex ia IIC T4 Ga Ex ia IIIC T135°C Da IECEx: Ex ia IIC T4 Ga Ex ia IIIC T135°C Da	**Remote Sensor Accessory:** UL/c-UL = Class I, Div. 1, Groups A, B, C & D; Class II Division 1 & 2, Groups E, F & G; Class 1, Zone 0, Group IIC; Class II, Zone 20 ATEX: ⟨Ex⟩ II 1G D Ex ia IIC T4 Ga Ex ia IIIC T135°C Da IECEx: Ex ia IIC T4 Ga Ex ia IIIC T135°C Da
Approvals	CE compliant in accordance with: ATEX Directive 94/9/EC, EMC Directive 2004/108/EC, EN 50270	

Ordering Information

A complete assembly consists of two parts, a transmitter and sensor which must be ordered separately.

- Transmitter PN#: Two certified versions are available:
  - ATEX/IECEx approved version (Aluminium version part number S3KAL2, S3KAL3 Stainless Steel version part number S3KAS2, S3KAS3)
  - UL/CSA approved version (Aluminium version part number S3KUL2, S3KUL3, Stainless Steel version part number S3KUS2, S3KUS3)
  - Inmetro approved version (Aluminium version part number S3KNL2, S3KNL3, Stainless Steel version part number S3KNS2, S3KNS3)
- Sensor PN#: All certified ATEX, IECEx, UL, CSA (c-UL) with two digits to specify gas type and range:
  - e.g. S3KXXC1SS (C1 denotes Carbon Monoxide, with a default range of 0-300ppm and user configurable for ranges from 0-100ppm to 0-500ppm (in 100ppm steps))

Transmitter



Sensor Part Numbers and Available Gases

S3KXSO1SS	Oxygen (O_2) 0-25% Vol
S3KXSC1SS	Carbon Monoxide (CO) 0-300ppm (default) 0-100 to 0-500ppm selectable
S3KXSC2SS	Carbon Monoxide (CO) 0-300ppm (default) 0-100 to 0-999ppm selectable
S3KXSH1SS	Hydrogen Sulphide (H_2S) 0-15ppm (default) 0-10 to 0-50ppm selectable
S3KXSH2SS	Hydrogen Sulphide (H_2S) 0-100ppm (default) 0-50 to 0-500ppm selectable
S3KXSL1SS	Chlorine (Cl_2) 0-5ppm (default) 0-5 to 0-20ppm selectable
S3KXSS1SS	Sulphur Dioxide (SO_2) 0-15ppm (default) 0-5 to 0-20ppm selectable
S3KXSX1SS	Chlorine Dioxide (ClO_2) 0-1ppm only

Ordering Information Continued

Ordering Information Continued	
S3KXSM1SS	Nitrogen Monoxide (NO) 0-100ppm only
S3KXSN1SS	Nitrogen Dioxide (NO_2) 0-10 ppm (default) 0-5 to 0-50 ppm selectable
S3KXSG1SS	Hydrogen (H_2) 0-1000ppm only
S3KXSG2SS	Hydrogen (H2) 0-10,000 only
S3KXSR1SS	Hydrogen Chloride (HCl) 0-10ppm (default) 0-10 to 0-20ppm selectable
S3KXSA1SS	Ammonia (NH_3) 0-200ppm (default) 0-50 to 0-200ppm selectable
S3KXSA2SS	Ammonia (NH_3) 0-1000ppm (default) 0-200 to 0-1,000ppm selectable
S3KXSY1SS	Hydrogen Cyanide (HCN) 0-30 ppm only
S3KXSF1SS	Hydrogen Fluoride 0-12 ppm only
S3KXSP1SS	Phosphine 0-1.2 ppm only
S3KXSU1SS	Florine (F_2) 0-4.00ppm only
S3KXSZ1SS	Ozone (O_3) 0-0.400ppm only
S3KXSE1SS	Ethylene Oxide (ETO) 0-25.0ppm (default) 0-20.0 to 0-50.0ppm selectable
Shipping Details	
Shipping carton dimensions **Approximate weight**	315mm (12.4") (L) x 230mm (9.0") (W) x 115mm (4.5") (D) Aluminium alloy LM25 : 1.7kg (3.75lbs.) Stainless Steel 316 : 3.7kg (8.16lbs.)
Optional Accessories	
SPXCDMTBR	Pipe Mounting Bracket
SPXCDSDP	Sunshade/Deluge Protection
S3KCAL	Calibration gas flow housing
S3KCC	Collecting cone (for use when detecting Hydrogen gas only)
S3KDMK	Duct mounting kit (for use when detecting O_2, CO, H_2S or H_2 gas)
S3KRMK	ATEX/UL/c-UL approved remote sensor mounting kit (includes enclosure with sensor socket, 15m (50 feet) of digital cable and glands, transmitter cable plug, mounting screws)
Calibration Gases	Contact Honeywell Analytics representative

Honeywell Analytics Gas Detection

Honeywell Analytics is able to provide gas detection solutions to meet the requirements of all applications and industries. Contact us in the following ways:

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gasdetection@honeywell.com

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Tel: +41 44 943 4380 (Alternative number)
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Middle East Tel: +971 4 450 5852 (Portable Gas Detection)

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www.honeywellanalytics.com
www.raesystems.com

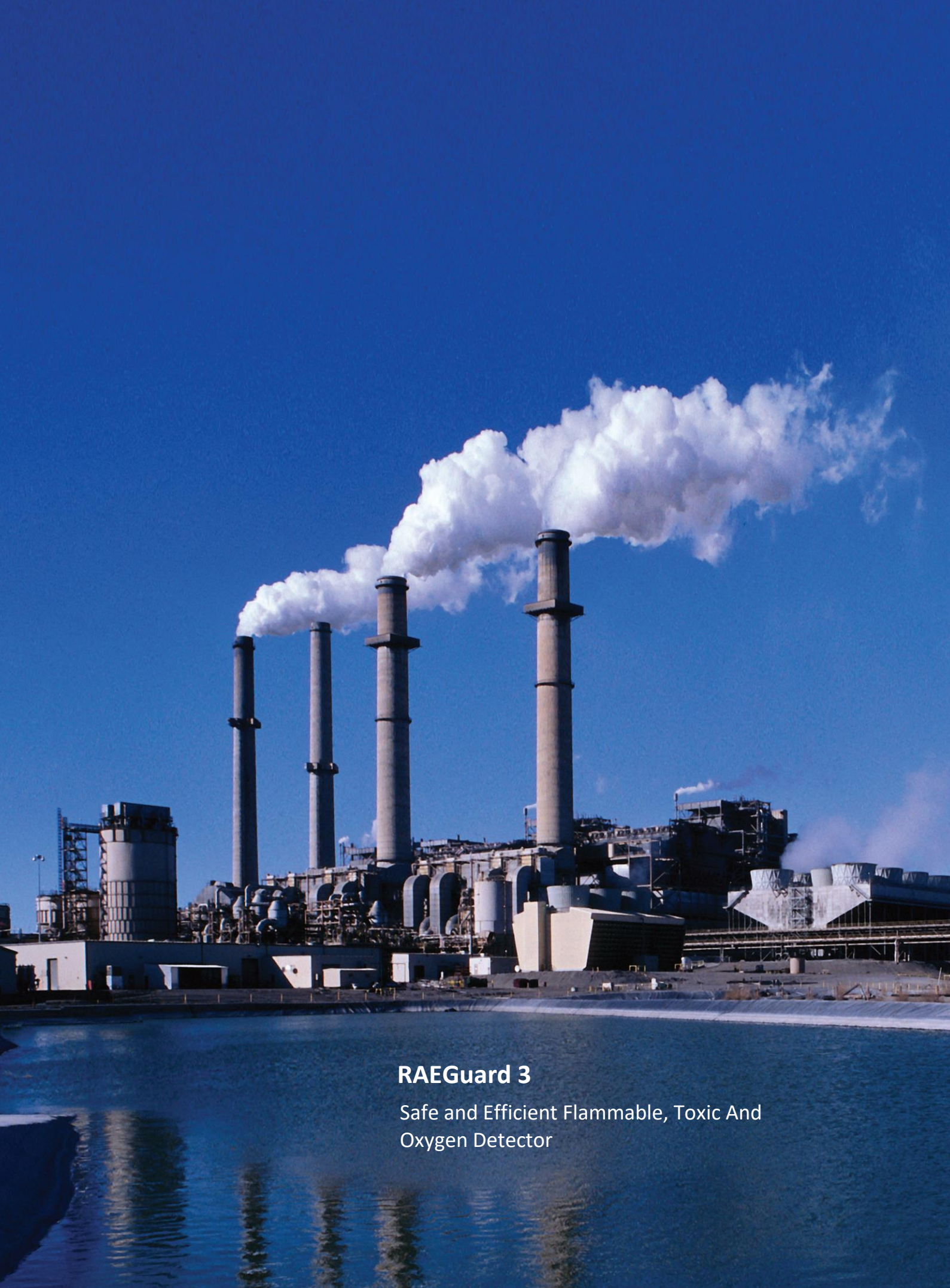
Honeywell Analytics
Experts in Gas Detection

BW Technologies by Honeywell

RAE SYSTEMS by Honeywell

12113_H_Series 3000 MkII & MkIII_DS01057_V9_EMEA
05/15

Honeywell



RAEGuard 3

Safe and Efficient Flammable, Toxic And Oxygen Detector

Dedicated to Your Safety

RAEGuard 3

RAEGuard 3 Series is Honeywell's masterpiece detector of toxic and flammable gas that represents advanced technology and development potential in the future. It provides users with safer, more stable, more reliable and more effective field transmitter, and can be applied in indoor and outdoor hazardous environments, to monitor the dangerous degree of hazardous gases in real time, so as to rapidly and effectively protect the safety of the installation site and production personnel.

The core of RAEGuard 3 — the sensors passed through strict selection and can ensure reliable and stable operation of the transmitter. Combustible gas detector uses catalytic sensor technology with long life (> 5 years) and high anti-poisoning. Toxic and Oxygen detectors adopt a variety of compensatory electrochemical sensor technology, especially Oxygen detector can avoid zero-free (nitrogen) calibration. At the same time, NDIR infrared detection technology with long life, anti-poisoning and Oxygen-free NDIR infrared detection technology allows RAEGuard 3 to be used in a wider and more harsh gas detection environment.

To Your Safety

- All adopt advanced sensor technology
- Wider compensation for temperature and environmental factors keeps the instrument reliable and stable.
- Redundant design to ensure no "false alarm"
- Clear indications of status can perceive the degree of environmental hazards even at long distances.
- Optional integrated visible and sound alarm, light and sound constantly remind, alarm signal will not be ignored
- Optional built-in surge protection device to make sure outdoor installation of "worry-free"
- IP66/67
- TUV SIL2

Self-Management

- Life expiration reminder
- Calibration period expiration reminder
- Alarm, STEL/TWA, fault, warning and other event reminders
- Fault code reminder

Universal Transmitter

- Simplified and reduced cost of installation
- Decreased material management
- Reduced user's spares and training
- Minimal maintenance required

Easy to Use

- Easy read backlit LCD with text, bar graph, digits and icons, support EN and CN
- 3 high-recognized and visible LED status indicators
- 3-wire 4-20mA current output can be fine-tuned to avoid the signal attenuation caused by wiring
- Optional HART® communications as standard for remote diagnostics/configuration
- Optional Bluetooth® for easy remote operation and maintenance via mobile app
- RS485 Modbus RTU for multi-drop networking and remote real-time monitoring
- Local or remote sensor installation options

Cost Effective

- Auto-identify sensor gas types, allow full scale range setting of toxic and Oxygen detectors
- Hot swap toxic and Oxygen sensor module on site
- Fully configurable via non-intrusive magnetic switches by single person
- Auto-inhibit during maintenance

Easy to Install

- Integral mounting plate or optional rewarded backboard mount kit for easy wall or pipe mounted
- 3/4”NPT M, 1/2”NPTM/F, G3/4”M/F, G1/2”F and M20 F varied glands selectable
- Flip-up PCB block removes to give access to terminal area
- Removable plug/socket type terminal blocks for ease of wiring

Certification

- China: Ex, CPA, CCCF
- EU: CE, EMC, ATEX
- IECEx
- TUV SIL2

Applications

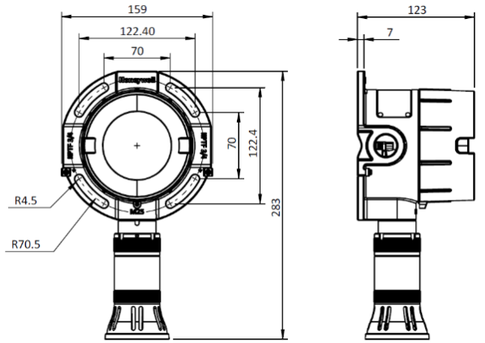
- Oil & Gas
- Chemical industry
- Oil & Gas Storage and Transportation
- Food/beverage
- Refineries
- Power plants
- Steel plants
- Laboratory
- Waste water facilities
- Utilities
- Pharmaceutical plant
- Chemical Storage
- Automotive industry

Installation

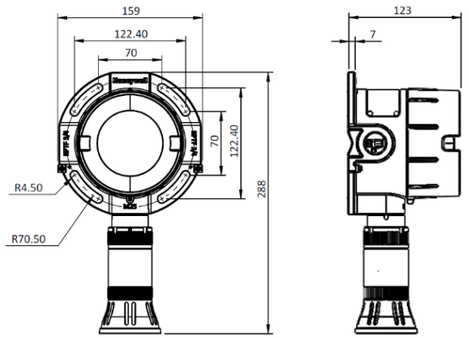
Installation Dimension

RAEGuard 3 Series detector is designed for use in potentially explosive atmosphere. The installation of detectors should ensure their explosion-proof performance and strictly follow the relevant national standards, to use industrial-grade armored cables and explosion-proof glands and conduits.

Use 0.5mm² (20AWG)to 2.5mm²(13AWG) cross sectional area cable as needed to ensure minimum operating voltage at the detector,depending on installed cable length.



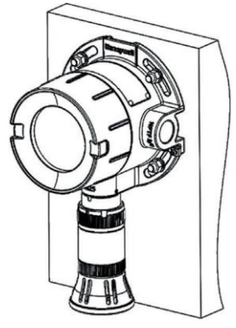
Dimension of RAEGuard 3 Toxic and Oxygen



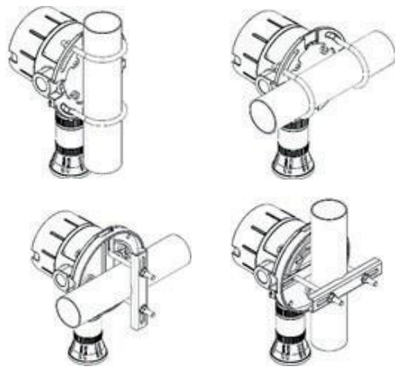
Dimension of RAEGuard 3 Flammable and NDIR

Unit: mm

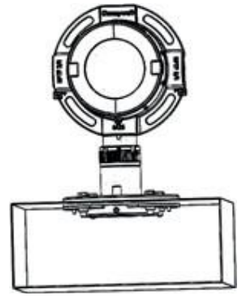
Mounted Mode



Wall Mounted



Vertical or horizontal pipe mounted (Mounting plate kit can be selected directly)

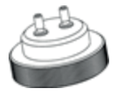


Duct Mounted

Other Accessories

Sunshade/delug

Collecting Cone



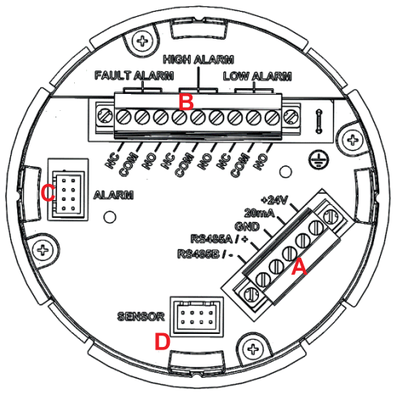
Gas Flow Adapter

Mounting Plate Kit

Electrical

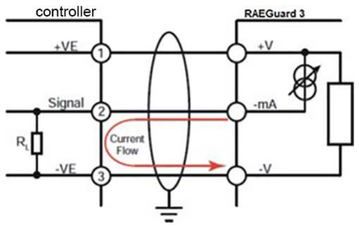
RAEGuard 3 transmitter only provides source current output. The maximum supported cable length can refer to the recommended values in the User's Manual.

RAEGuard 3 Wiring Terminals



Terminals	Identification	Definition	Remarks
A	+24V	+VE Supply (16~32VDC)	Controller
	4-20mA	4-20mA current & HART output	
	GND	-VE Supply	
	RS485A/+	MODBUS A(+)	MODBUS RTU
	RS485B/-	MODBUS B(-)	
B	LOW ALARM-NO	Low Alarm - Normally Open	Note: If the function is not purchased at the time of ordering, there is no terminal.
	LOW ALARM-COM	Low Alarm - Common	
	LOW ALARM-NC	Low Alarm - Normally Closed	
	HIGH ALARM-NO	High Alarm - Normally Open	
	HIGH ALARM-COM	High Alarm – Common	
	HIGH ALARM-NC	High Alarm - Normally Closed	
	FAULT ALARM-NO	Fault - Normally Open	
	FAULT ALARM-COM	Fault – Common	
	FAULT ALARM-NC	Fault - Normally Closed	
C	ALARM	External SP-07J/07A	Optional
D	SENSOR	Connect with sensor	

RAEGuard 3 Source Configuration



Technical specifications

RAEGuard 3 Gas Detector	
Use	Universal transmitter with standard configuration of 3-wire, 4-20mA and RS485 MODBUS output for use with a wide range of applications for the detection of flammable, toxic and Oxygen gas hazards.
Electrical parameters	
Input Voltage Range	16-32VDC (24VDC nominal)
Max Power Consumption	Electrochemical Cells: 5.5 watts; Catalytic or NDIR: 7.5 watts
Current Output	Completely configurable 4~20mA (source type) with optional HART® 7.2 protocol as following as default configurations of current output. 1mA Fault 2mA Inhibit (during configuration or setup) 3mA Warning 4mA~20mA Normal 22mA Overrange Note: When the current output is less than 3mA, HART communication will not work properly.
Terminals	5 terminals (14 terminals for use with relay output), wire diameter 0.5mm²（20AWG）to 2.5mm²（13AWG）
Relays	3 x 2A@30VDC. Selectable normally open or normally closed and energised/de-energised(programmable) and latch/non-latch Alarm relays default energised/non-latch. Fault relay default energised/non-latch
Communication	RS485, Modbus RTU Optional Bluetooth
Construction	
Transmitter Housing Material	Aluminum Alloy or 316 Stainless Steel
Sensor Housing Material	316 Stainless Steel
Weight (Approx)	Aluminum Alloy: 3.0kg; Stainless Steel: 5.0kg
Mounting	Integral mounting plate with 4 x mounting holes suitable for M8 to fit onto Wall or Pipe
Entries	2 x 3/4" NPT cable/conduit entries and 1 x M25 sensor entry. 1 x plug supplied for use for only 1 entry used. Seal to maintain IP rating
Performance****	
Repeatability	<2%
Response Time(T90)	Depending on the gas being detected
Certification	
European	ATEX: LEL/NDIR: CE2460 ⓔII 2G Ex db IIC T6 Gb Ta = -40°C to +65°C Toxic and Oxygen: CE2460 ⓔII 2G Ex db ia IIC T6 Gb Ta = -20°C to +55°C
International	IECEx: LEL/NDIR: Ex db IIC T6 Gb Ta = -40°C to +65°C Toxic and Oxygen: Ex db ia IIC T6 Gb Ta=-20°C to +55°C
China	LEL/NDIR: Ex d IIC T6 Gb Ex tD A21 IP66 T85°C Toxic and Oxygen: Ex d ia IIC T6 Gb Ex tD A21 IP66 T85°C CCCF, CPA
EMC	EN50270:2015, IEC 61000-4-5
Performance**	IEC 60079-29-1, EN 50104 IEC 61508 (SIL Assessment, SIL2)
Surge Immunity	Optional Surge Protection Device, Compliance with GB/T 17626.5-2008/IEC61000-4-5:2005, Meets “Installation Class 4”
Environmental	
IP Rating	Toxic and Oxygen: IP66/67 LEL/NDIR: IP66
Operating Temperature***	-40°C~+70°C
Operating Humidity	LEL/NDIR: 0~95%RH (Non-condensing) Toxic and Oxygen: 15%~95%RH (Non-condensing)
Operating Pressure	90~110kPa
Storage Conditions	-20°C~+50°C, 45-75%RH(Non-condensing), in clean air

Gas	Default Range	Selectable Full Scale Range	Resolution	Lower Detectable Limit	Default Cal Point	Selectable Cal Gas Range	Response Time (T90)	Accuracy	Default Alarm 2	Default Alarm 1	STEL	TWA
O_2	30.0%vol	25.0~30.0%vol	0.1%vol	-	20.9%vol	20.9%vol (Fixed)	<20s	<±0.7%vol	23.5%vol ▲	19.5%vol ▼	n/a	n/a
H_2S	100ppm	20.0~200.0ppm	0.1ppm	0.5ppm	50ppm	30%~70% Of Full Scale Range	<25s	<±5ppm	20ppm ▲	10ppm ▲	5ppm	1ppm
CO	500ppm	50~1000ppm	1ppm	3ppm	250ppm		<25s	<±5ppm	50ppm ▲	25ppm ▲	27ppm	18ppm
LEL	100%LEL	100%LEL	1%LEL	-	50%LEL		<25s	<±5%LEL	50%LEL ▲	25%LEL ▲	n/a	n/a
CH_4-IR	100%LEL	100%LEL	1%LEL	-	50%LEL		<30s	<±5%LEL	50%LEL ▲	25%LEL ▲	n/a	n/a
NH_3-L	100ppm	20.0~100.0ppm	0.1ppm	2ppm	50ppm	20%~80% Of Full Scale Range	<60s	<±5ppm	70ppm ▲	35ppm ▲	35ppm	25ppm
Cl_2	10ppm	5.0~50.0ppm	0.05ppm	0.1ppm	5ppm		<40s	<±1ppm	6ppm ▲	3ppm ▲	1ppm	0.5ppm
SO_2	20ppm	10.0~50.0ppm	0.1ppm	0.2ppm	5ppm		<25s	<±0.5ppm	10ppm ▲	5ppm ▲	3.8ppm	1.9ppm
C_2H_3Cl	100ppm	10.0~100.0ppm	0.1ppm	0.3ppm	50ppm		<90s	<±10%	10ppm ▲	5ppm ▲	7.6ppm	3.8ppm
Cl_2-L	5ppm	1.00~5.00ppm	0.01ppm	0.2ppm	2ppm		<70s	<±0.2ppm	0.6ppm ▲	0.3ppm ▲	1ppm	0.5ppm
H_2	1000ppm	1000ppm	1ppm	5ppm	200ppm		<90s	<±10% / <±5%FS	400ppm ▲	200ppm ▲	n/a	n/a
ETO	100ppm	10.0~100.0ppm	0.1ppm	0.3ppm	50ppm		<150s	<±10% / <±5%FS	10ppm ▲	5ppm ▲	2ppm	1ppm
HCl	30ppm	10.0~30.0ppm	0.1ppm	0.3ppm	10ppm		<45s	<±10% / <±5%FS	10ppm ▲	5ppm ▲	2ppm	1ppm

Remarks:

* RAEGuard 3 will provide users more communication interfaces and gas types in the future, such as wireless. For availability, please contact Honeywell Analytics.

** Availability for SIL2 certificate, please contact Honeywell Analytics.

*** Catalytics and NDIR-CH_4 sensor can work continuously at -40°C ~ +70°C; toxic and oxygen sensor can work continuously at -20°C ~ +55°C, intermittently at -40°C ~ +70°C (The accuracy and response time of sensors operating in this temperature range will be affected, and long-term operation may lead to sensor sensitivity decline or even damage.)

**** The performance characteristics of the products mentioned above are typical results tested in an environment with a temperature 20°C and a humidity of 50% RH. When calibrating, use the calibration cap and recommended flow for detection. If the sunshade/deluge cover is used instead or the detection is carried out at low temperature, the response time will be slowed down.

FGM-6a00b, “a” indicates sensor type, includes 1(LEL), 2(NDIR), 3(EC). “b” indicates material of main housing, includes S (stainless steel) and blank(aluminum alloy).

Honeywell
THE POWER OF CONNECTED

Connected Industrial

INDUSTRIAL FLAME MONITORING

Engineered For The Toughest Environments

Form, function, and flame detection

Honeywell Industrial Flame Monitoring (IFM) offers reliable, durable, and flexible solutions for the most challenging applications and toughest environments. Tailor-made for the unique demands of industrial processes, Honeywell IFM products are designed for the highest level of function and flame discrimination. Remote configuration, monitoring, and diagnostics, as well as multiple sensor options, make Honeywell the ideal solution for a wide array of industrial processes and applications.

Honeywell IFM Technology

Honeywell Industrial Flame Monitoring systems use shutterless UV Tron with pulse technology. UVTron based systems are not adversely affected by gamma and x-rays making them ideal for flame monitoring in the toughest environments. Multiple sensors operating independently provide monitoring of difficult flames and a high level of discrimination.

In addition, adjustable flame on/off threshold, gain and flicker settings provide for ease of configuration. All industrial flame monitoring products meet reliability standards of a wide range of applications and are fit for use in SIL 3 operations.

Easy and Flexible Programming

Choose from three programming methods that all offer flexibility and fine-tuning:

- Automatic
- Manual
- Factory default

Reliable, Durable, and Flexible Flame Monitoring Solutions

Flexible Application

Honeywell IFM products are the ideal solution for a wide array of industrial processes and applications.

- Available in AC or DC with multiple inputs
- Multiple sensor options to meet application needs
- Independent configuration for each sensor
- Meets international safety standards*
  - Class I div 1 groups E, F, and G
  - Class I div 2 groups E, F, and G
  - Ex nA and Ex d
  - CSA/FM
  - Pending EN298 and KTL
  - SIL 3 capable
  - INMETRO
- User selectable scalable 0/4-20 mA flame signal output
- Viewing head temperature indication
- Multiple high-pass flicker frequency selection

* For complete list of approvals please visit customer.honeywell.com

Gamma and X-Ray Immune

Viewing heads are not affected by x-rays and gamma rays during pipe weld checks; ideal for industrial applications.

Key Application Attributes

- Multiple sensors enable reliable monitoring of all fuel flames
- Adjustable gain, inFlame Onin and inFlame Offin threshold settings
- Digital processing results in reduced field set-up time
- For ease of replacement, processor can be preconfigured
- Easy-to-replace processor plug-in connections
- Wide range of gain adjustment and multiple flicker frequency to monitor flame in all firing conditions

Burner Management System Interface

Each signal processor includes two or more SPDT flame relay contacts and one SPDT self-check relay contact, allowing for interlock, monitoring, and easy distinction between hardware, software, and flameout faults.

The U2S Series includes a normally open flame on contact and a normally open (failsafe) fault check relay contact.

Industry Applications

REFINERIES

- Petroleum
- Petrochemical
  Utility/power generation
- Pulp/paper
- Metals

BOILERS

- Industrial process
- Black liquor recovery
- Co-generation
- Grate fired Cement or lime kilns
- Claus reactors (H2S)
- Thermal oxidizers
- Gas turbines

BURNERS

- Single or multiple burners
  Combination fuel firing oil-gas and coal
- Low NOx
- Opposed fired
- Hydrogen
- Duct
- Register
- Exotic fuels
- Hostile environment

S70X and S80X Series Viewing Heads

The perfect fit for single-fuel applications.

Model S70X/S80X viewing heads are used with 700, P531 or P532 signal processors and are ideal for single-fuel applications where a high level of discrimination is not required. The viewing heads contain UVTron with pulse technology making them optimal for low NOx gas burners where there are small and slow moving flames.

Features

- Multiple models (IR or UVTron) offer application flexibility.
- All models include electronic check (no mechanical shutter) for self-examination of the system.
- Quick disconnect cable includes two LEDs one for self-check indication and one for flame on flashing proportional to flame strength.

Specifications

- **Input power:** 22 to 26 VDC from the processor.
- **Ambient temperature:** -40°F to 185°F (-40°C to 85°C). NEMA 4X rated.
- Not adversely affected by x-ray and gamma rays.
- PF models have a factory installed cable.

Approvals

- FM, CSA
- IEC Ex, InMetro, KTL
- Class I div 2 groups A, B, C and D, T4A
- IEC Ex nA IIC T4 Gc
- Fit for use in SIL 3 applications

Model Part Number	Sensor Type	Description
S702	IR	Quick disconnect cable. Suitable for oil
S702PF	IR	Factory installed cable. Suitable for oil.
S706	UVTron	Quick disconnect cable. Suitable for clean gaseous fuel.
S706PF	UVTron	Factory installed cable. Suitable for clean gaseous fuel.
S802	IR	Quick disconnect cable. Suitable for oil.
S806	UVTron	Quick disconnect cable. Suitable for clean gaseous fuel.

S70X Approximate Dimensions:
9.4in Length (230 mm), 1.48in Barrel Diameter (36 mm). Polished aluminum body.

S80X Approximate Dimensions:
8.9in Length (226 mm), 1.14in Barrel Diameter (29 mm). Stainless steel body.

700 Series Signal Processors

Deliver reliable monitoring, day in and day out.

Model 700 signal processors are single-channel, fail-safe, self-checking flame monitoring systems when used in conjunction with the S70X/S80X series viewing heads. They offer easy setup, medium level discrimination, and high reliability.

Features

- Intuitive keypad for easy setup and configuration.
- Two-digit numeric display and four LED status indicators.
- Compact DIN rail mountable design.
- Plug-in terminal connectors allow for easy installation.
- Low power consumption.
- Environmentally sealed switches.
- Modbus RS422 communication for use with FlameTools-PC or FlameTools-HMI/U supports 32 loops.

Specifications

- **Ambient temperature:** 32°F to 140°F (0°C to 60°C).
- **Flame relay:** 2 form C contacts.
- **Self-checking relay:** 1 form C contact.
- **Relay contact ratings:** 5A at 125 VAC, 277 VAC, & 30 VDC; 1/8 HP 125 & 250 VAC.
- **Analog flame signal:** Isolated 0-20 mA or 4-20 mA output for remote meters.
- Auto burner configuration for burner on/off.
- Adjustable flame relay on/off set point.
- Adjustable FFRT 1, 2, or 3 seconds.

Approvals

- FM, CSA
- Fit for use in SIL 3 applications

Model Part Number	Description
700ACSP	AC signal processor. 85 to 264VAC, 50 or 60 Hz, 0.07A max with 24VDC backup power.
700DCSP	DC signal processor. 22 to 26VDC, 250 mA max with 24 VDC backup power.

Approximate Dimensions:
5.5in Height (140 mm) x 3in Width (76 mm) x 3in Depth (76 mm)

P522 Series Signal Processors

Ideal for applications where a high level of discrimination is required.

Model P522 signal processors are fail-safe, self-checking signal processors that are used with two switched S55XBE series viewing heads. They offer independent gain adjustments for each sensor and multiple flicker set points for IR which makes them ideal for applications where a high level of discrimination is required.

Features

- 4-digit digital flame signal display, 4 LED status indicators and analog bar graph provide continuous system status.
- Panel mounted design and plug-in terminal connectors allow for easy installation.
- Adjustable Flame on/off threshold.
- Supports two switched viewing heads.
- Two configurable files for remote selection.
- Scalable mA output.
- Modbus RS422 communication for use with FlameTools-PC or FlameTools-HMI/U supports 64 loops.

Specifications

- **Ambient temperature:** 32°F to 122°F (0°C to 50°C).
- **Flame relay:** 2 form C contacts.
- **Self-checking relay:** 1 form C contact.
- **Relay contact ratings:** 5A at 30 VDC, 125 VAC and 277 VAC.
- **Analog flame signal:** scaleable 0-20 mA or 4-20 mA output for remote meters, 360 ohms maximum resistance.
- Digital set points for flame on/off.
- 4 wire communication.
- Adjustable FFRT 1, 2, or 3 seconds.

Approvals

- FM, CSA
- Fit for use in SIL 3 applications

Model Part Number	Description
P522AC	AC signal processor. 85 to 264 VAC, 47 or 63 Hz with 24 VDC backup power.
P522DC	DC signal processor. 22 to 26 VDC with 24 VDC backup power.

Approximate Dimensions:

7.25in Height (182 mm) x 4.25in Width (108 mm) x 6.4in Depth (163 mm)

P531 and P532 Series Signal Processors

Monitor three viewing heads simultaneously.

Model P531 and P532 signal processors are fail-safe, self-checking signal processors capable of monitoring two S55XBE and one S70X series viewing heads simultaneously. Furthermore, they can display UV and IR flame count separately when used with the S550BE viewing head. P532 includes integrated programming and P531 uses the detachable P532UI user interface for programming. The processors offer independent gain adjustments, and for S552BE and S550BE, multiple frequency settings. Their design makes them ideally suited for tangentially fired boilers where two viewing heads are required for the main burner and S70X for side or horn igniters.

Features

- P532 includes a front panel display with large, bright, three color alphanumeric dot matrix displays with LEDs.
- The P531 + P532UI detachable user interface reduces cost when multiple units are required.
- Ability to monitor UV and IR separately from one S550BE viewing head.
- Automatic set-up functionality (auto gain, auto sequence, and auto filter).
- Marginal alarm relays can be configured to provide a secondary indication if flame count drops below set value.
- Modbus RS422 communication for use with FlameTools-PC or FlameTools-HMI/U supports 64 loops and 32 loops, respectively.

Specifications

- **Ambient temperature:** -40°F to 140°F (-40°C to 60°C) for FM or 32°F to 125°F (0°C to 52°C) for CSA.
- **Flame relay:** 3 channels of 2 form C contacts.
- **Self-checking relay:** 3 channels of 1 form C contact.
- **Relay contact ratings:** 5A at 32 VDC and 250 VAC.
- **Analog flame signal:** scaleable 0 mA output for remote meters.
- Auto burner configuration for burner on/off.
- Adjustable FFRT and flame on/off threshold set point.

Approvals

- FM, CSA
- Fit for use in SIL 3 applications

Model Part Number	Description
P531AC	AC signal processor. 85 to 264 VAC, 47 or 63 Hz with 24 VDC backup power.
P531DC	DC signal processor. 24 VDC with 24 VDC backup power.
P532UI	Detachable user interface for P531 signal processors.
P532AC	AC signal processor. 85 to 264 VAC, 47 or 63 Hz with 24 VDC backup power.
P532DC	DC signal processor. 24 VDC with 24 VDC backup power.

Approximate Dimensions:

6.7in Height (170 mm) x 4.3in Width (109 mm) x 6.4in Depth (162 mm)

S55XBE Series Viewing Heads

The ideal solution for monitoring all fuel types.

S55XBE series viewing heads are used with P522, P531, and P532 signal processors. Multiple sensor options of IR, UVTron, and IR/UV offer flexibility to meet a wide array of applications. The system is not adversely affected by x-rays and gamma rays during operation making them ideal for monitoring all fuel flames and single or multiple burners firing multiple fuels.

Features

- Multiple models (IR/UV, IR only, and UVTron only) offer application flexibility.
- All models include electronic check (no mechanical shutter) for self-check of the system.
- Numeric two-digit display for each sensor on the back of the viewing head provides UV and IR flame count.
- Quick disconnect cable (order separately) for non-PF models. PF models provided with factory installed cable.
- Mountable in any orientation.
- Includes imbedded temperature sensor.

Specifications

- **Input power:** 24 VDC supplied from the processor.
- **Ambient temperature:** -40°F to 158°F (-40°C to 70°C). NEMA 4X rated.
- 1inch NPT mounting.
- Not adversely affected by x-rays and gamma rays.

Approvals

- FM, CSA, EAC
- IEC Ex, INMETRO, KTL
- Class I div 2 groups A, B, C and D, T5
- IEC Ex nA IIC T5 Gc
- Fit for use in SIL 3 applications

Model Part Number	Sensor Type	Description
S550BE	IR/UV	Quick disconnect cable. Suitable for all fuels.
S550BE-PF	IR/UV	Factory installed cable. Suitable for all fuels.
S552BE	IR	Quick disconnect cable. Suitable for oil and coal.
S552BE-PF	IR	Factory installed cable. Suitable for oil and coal.
S556BE	UVTron	Quick disconnect cable. Suitable for clean gaseous fuel.
S556BE-PF	UVTron	Factory installed cable. Suitable for clean gaseous fuel.

S70X Approximate Dimensions:

8.82in Length (224 mm) x 4.05in Diameter (103 mm).
Powder coated aluminum body.

U2S Series

All-in-one integrated processor and viewing head solution.

The U2S Series is an all-in-one integrated processor and viewing head system which is uniquely suited for single or multi-burner, multi-fuel, and difficult flame detection applications. The all-in-one solution eliminates the need for a separate processor which saves on cabinets and wiring. Multiple models and sensor options meet difficult flame monitoring applications requiring a high level of discrimination.

Features

- Electronic check (no mechanical shutter) for self-check of the system.
- Independent configuration and adjustable gain settings for each sensor.
- Ten selectable flicker frequency filters for solid state UV and IR sensor (model dependent).
- New updated, fully programmable touch screen interface, with an easy menu for an enhanced user experience.
- Modbus RS485 communication for use with FlameTools-PC or FlameTools-HMI/U supports 248 loops and 32 loops, respectively.
- Advanced safety features

Specifications

- **Input power:** 22-26 VDC, 120 mA max.
- **Output relay contacts:** 2one normally open flame relay and one normally open fault/self-check relay, 1A, 30 VDC.
- **Ambient temperature:** -40°F to 158°F (-40°C to 70°C).
- **Analog flame signal:** 0-20 mA or 4-20 mA output.
- **Enclosure:** IP66.
- Adjustable flame on/off threshold.
- Adjustable FFRT 1, 2, or 3 seconds.
- 1in NPT mounting.
- Not adversely affected by x-rays and gamma rays.

Approvals

- FM, CSA, EN298, EAC, pending INMETRO & KTL
- **PF version:** Class I div 1 Gr A, B, C, D, E, F, G T6, ATEX/IECEx Ex d IIC; Ex tb IIIC
- **Quick disconnect version:** Class I div 2 Gr A, B, C, D T5, ATEX/IECEx Ex nA nC IIC; Ex tb IIIC
- Fit for use in SIL 3 applications

Model Part Number	Sensor Type	Description
U2-1010S	IR/UV Tron/ UVSS	Quick disconnect cable. Suitable for all fuels.
U2-1010S-PF	IR/UV Tron/ UVSS	Factory installed 10 ft cable. Suitable for all fuels.
U2-1010S-PF-050	IR/UV Tron/ UVSS	Factory installed 50 ft cable. Suitable for all fuels.
U2-1010S-PF-100	IR/UV Tron/ UVSS	Factory installed 100 ft cable. Suitable for all fuels.
U2-1012S	IR	Quick disconnect cable. Suitable for oil and coal.
U2-1012S-PF	IR	Factory installed 10 ft cable. Suitable for oil and coal.
U2-1016S	UV Tron	Quick disconnect cable. Suitable for gaseous fuels.
U2-1016S-PF	UV Tron	Factory installed 10 ft cable. Suitable for gaseous fuels.
U2-1018S	IR/UV Tron	Quick disconnect cable. Suitable for all fuels.
U2-1018S-PF	IR/UV Tron	Factory installed 10 ft cable. Suitable for all fuels.
ASYU2S	Cable	50 ft cable assembly with connector
ASYU2S-100	Cable	100 ft cable assembly with connector
ASYU2S-200	Cable	200 ft cable assembly with connector
ASYU2S-300	Cable	300 ft cable assembly with connector

Approximate Dimensions:

6.1in Length (155 mm) x 4.6in Diameter (117 mm)

WatchdogIIIBE Flare Stack Monitoring System

Reliable flame monitoring in the toughest environments.

Built rugged to last, the WatchdogIIIBE Flare Stack monitoring system reliably monitors flames from remote locations under difficult conditions such as dust, fog, heavy rain, snow, and background sun rays. The ability to connect an existing ignition system, and its ground mounted design make it easy to install and service without flare shut down, saving valuable time and money.

Features

- Not affected by the sun which allows viewing head to be located anywhere around the flare stack.
- Easy to set up with multiple LEDs and pushbuttons.
- Lightweight and low power consumption.
- No moving parts ensures reliability.
- Easy installation and service with no plant shut down or flare interruption required.
- S256BE ground mounted viewing head has a 1000 ft. line of sight range with 40 ft. diameter target (at 1,000 ft.).
- P222 signal processor can be remotely mounted.

Specifications

- **AC power:** 85 to 264 VAC (300 mA maximum with viewing head connected), 47-440 Hz with 24VDC backup power.
- **DC power:** 22 to 26 VDC (300 mA maximum with viewing head connected) with 24VDC backup power.
- **Signal processor ambient temperature:** 32°F to 140°F (0°C to 60°C).
- **Viewing head ambient temperature:** -40°F to 176°F (-40°C to 80°C).
- **Viewing head housing:** NEMA 4X.
- **Analog flame signal:** Scalable 0-20 mA or 4-20 mA output.
- **Two time delay relays:** one 0-60 seconds (R1), one 0-3600 seconds (R2).

Approvals

- QPS to CSA 22.2 (viewing head) for use in Class I div 2 groups C and D, T4s

Model Part Number	Description
WATCHDOGIIIBE	Kit consisting of P222 signal processor, S256BE viewing head, and ASY55XBE 50' cable with overmolded and wired ends.
S256BE	Replacement UV flare stack viewing head powered from P522 signal processor.
P222	Replacement Watchdog signal processor.

S256BE Approximate Dimensions:

Scope 20.25in (514 mm) x 3in diameter (76 mm)

P222 Approximate Dimensions:

7.25in Height (182 mm) x 4.25in Width (108 mm) X 6.4in Depth (163 mm)

GHE1-3 and GHE2-5 Series Gas Igniters

Reliable, maintenance-free, non-fouling operation.

Designed for continuous operation, GHE igniters are non-fouling, inextinguishable, high-energy igniters. The self-cleaning igniter spark tip reliably ignites fuels regardless of accumulated hardened oil and debris on the tip. Three stage ignition and internal mix technology allow for consistent operation, which overcomes problems associated with external mix that are ambient temperature dependent. GHE igniters are the ideal choice for high energy output and reliable ignition.

Features

- GHE gas igniter system consists of a custom length igniter system, power pack and interconnecting HT cable.
- Multi stage ignition and stainless steel pilot nozzle.
- Self cleaning spark tip will work with accumulated hardened oil and other debris accumulated on tip.
- GHE1-3 has flanged connection and GHE2-5 has quick disconnect or flanged connection.
- Quick disconnect for HT line.
- Optional NEMA 12, 4, or 4X cabinet available for power pack
- Power pack is available in 110 or 220 VAC input.
- Optional optical flame monitoring.

Specifications

- **Power pack:** 100 to 130 VAC and 210 - 250 VAC, 50-60 Hz, 80 VA.
- **Output:** 2,000 VDC, 12 joule pulses at 180-240 sparks per minute.
- Minimum insertion length 19in (483 mm).

Model Part Number	Description
GHE1-3	Igniter used with gas fuels. 1-3 MMBTU/HR capacity. 1-7/8in diameter.
GHE2-5	Igniter used with gas fuels. 2-5 MMBTU/HR capacity. 2-7/8in diameter.

Contact Honeywell sales representative for ordering.

FlameTools

Remote configuration, monitoring, and diagnostics. Anywhere. Anytime.

The Honeywell FlameTools PC monitoring software and touchscreen display enable remote configuration, monitoring, and diagnostics for multiple signal processors, up to 32 loops for HMI and 248 loops for PC. FlameTools makes managing your system simpler and more convenient from anywhere, anytime.

Features

- Real time flame and temperature monitoring and logging for maximum efficiency.
- Configuration and monitoring modes.
- Remote access to system for increased flexibility
- Touchscreen version allows for easy set up and operation.
- Multiple loops display.
- Password protected for system security.
- Save configuration on external memory device.
- Export and save data to Excel for analysis and trending.
- PC version allows exporting of graphical chart.
- HMI and PC versions are user configurable.
- Touchscreen version eliminates need for a converter (PC version includes RS232 converter cable).

Model Part Number	Description
FlameTools-PC	PC monitoring software
FlameTools-HMI/U	Panel mount touchscreen display

Compatible with U2S and 700, P522, P531 and P532 signal processors.

Engineered To Order Group

Complete combustion solutions for a world of applications.

Honeywell Industrial Flame Monitoring can be incorporated into a combustion system designed by Honeywell Engineered Systems, saving engineering time and expense, while ensuring compliance to local codes and standards worldwide.

Each standard or custom-built engineered system – encompassing a combination of control panels, burners, burner management systems, IFM, control valves, and safety systems – will provide a turn-key combustion solution for new or existing applications. The experts at Honeywell Engineered Systems are here to help you maximize your business opportunities.

Benefits

- Standard or custom-built turn-key combustion systems.
- End-to-end project management from specification and sizing to commissioning and start-up.
- Global codes and standards expertise with proven application experience in nearly every country around the world.
- Industry best brands and performance from the Honeywell Industrial & Commercial Thermal family of products.
- Unmatched engineering expertise, service and support.
- World-class network of worldwide support.

Combustion Solutions from Simple to Complex

- Fuel skids and pipe trains
- Control panels
- Low temperature burners
- High temperature burners
- Line and duct burners
- Control valves
- Safety shut-off valves
- Combustion chambers
- Flame controllers
- Flame safe-guard
- Flame monitoring

Honeywell Industrial Flame Monitoring Compatibility Chart










	700DCSP	700DCSP	P522AC	P522DC	P531AC	P531DC	P532AC	P532DC	P222	600U	Fiber Optic System	700ACC	800ACC	ACC55XBE	Sensor Type	Application
S702	•	•			•	•	•	•			•	•			IR	Suitable for oil
S702PF	•	•			•	•	•	•			•	•			IR	Suitable for oil
S706	•	•			•	•	•	•			•	•			UVTron	Suitable for clean gaseous fuel
S706PF	•	•			•	•	•	•			•	•			UVTron	Suitable for clean gaseous fuel
S802	•	•			•	•	•	•			•		•		IR	Suitable for oil
S806	•	•			•	•	•	•			•		•		UVTron	Suitable for clean gaseous fuel
S550BE			•	•	•	•	•	•			•			•	IR+UV	Suitable for all fuels
S550BE-PF			•	•	•	•	•	•			•			•	IR+UV	Suitable for all fuels
S552BE			•	•	•	•	•	•			•			•	IR	Suitable for oil and coal
S552BE-PF			•	•	•	•	•	•			•			•	IR	Suitable for oil and coal
S556BE			•	•	•	•	•	•			•			•	UVTron	Suitable for clean gaseous fuel
S556BE-PF			•	•	•	•	•	•			•			•	UVTron	Suitable for clean gaseous fuel
WATCHDOGIIIBE									•							Flare stack monitoring system
Ionization Rod										•						Flame rod system for use with ignition transformer or coil
FlameTools-PC	•	•	•	•	•	•	•	•								PC software for remote configuration and monitoring
FlameTools-HMI/U	•	•	•	•	•	•	•	•								Touchscreen display for remote configuration and monitoring




U2S The U2S Series is an all-in-one integrated processor and viewing head system which is uniquely suited for single or multi-burner, multi-fuel and difficult flame detection applications where a high level discrimination is required. Multiple sensor options provide a wider range of selection to meet difficult flame monitoring applications.

1. For all AC models, voltage range is 85-264V, 50/60 Hz plus backup 24VDC input permitted.
2. For all DC models, input voltage 24VDC plus backup 24VDC input permitted.
3. For current approvals and additional models please visit customer.honeywell.com.
4. All models listed above, except WATCHDOGIIIBE and 600U, are fit for use in SIL 3 applications.

Honeywell Industrial Flame Monitoring Accessories

Part Number	Description	Product Details	Where to Use
700-1	1in NPT pipe mount	1in NPT pipe connection with swivel mount to 1/2in NPT viewing head connection. Swivel mount must be locked to prevent inadvertent movement.	Use when burner is equipped with 1inNPTM sight pipe.
700-2	Swivel mount	Two-bolt base mounting with swivel mount. Viewing head connection is 1/2in NPTM. Use where line of sight adjustments are required.	Use with all S70X and S80X viewing heads.
700-3	1/2in NPT pipe mount	1/2in NPT pipe connection with swivel mount to 1/2in NPTM viewing head connection. Use with all S70X and S80X viewing heads.	Use when burner is equipped with 1/2in NPTM sight pipe.
700ACC	Cooling jacket	Cooling air jacket for S70X and S70X-PF series viewing heads. Order with Vortex cooler M3204, M3028, or M3210.	Use when ambient temperature is higher than 85°C (185°F). 90 PSIG air is required.
700DA	1/2in NPT adapter	1/2in NPTF with 1/4in purge connection used with S70X viewing heads.	Use for 1/2in NPT connection to swivel mount or threaded 1/2in pipe.
700DA-1	1in NPT adapter	1in NPTF with 1/4in purge connection used with S70X viewing heads.	Use for 1in NPT connection to swivel mount or threaded 1in pipe.
700RAA	Right angle adapter	1/2in NPTF right angle viewing head adapter to 1/2in NPTM.	Use where space is limited (under the furnace).
700UA	1/2in NPT adapter	ULTherm heat insulator with 1/2in NPTF mounting and 1/4in purge connection.	Use when ambient temperature is higher than 85°C (185°F).
800ACC	Cooling jacket	Cooling air jacket for S80X and S80X-PF series viewing head. Order with Vortex cooler M3204, M3028, or M3210.	Use when ambient temperature is higher than 85°C (185°F). 90 PSIG air is required.
800ACC-RING	Adapter ring	Adapter ring to fit S80X viewing head to 700ACC cooling jacket.	Use with S80X viewing heads.
800DA	1/2in NPT adapter	1/2in NPTF with 1/4in purge connection used with S80X viewing heads.	Use for 1/2in NPT connection to swivel mount or threaded 1/2in pipe.
ACC55XBE	Cooling jacket	Cooling air jacket for S55X and S55X-PF series viewing head. Order with Vortex cooler M3204, M3028, or M3210.	Use when ambient temperature is higher than 85°C (185°F). 90 PSIG air is required.
ASY55XBE	50 ft. cable assembly	Factory molded cable for S55XBE; 50 feet (15 m) long, 4 conductors, overall foil shield and drain wire.	Use with S55XBE viewing heads.
ASY55XBE-100	100 ft. cable assembly	Factory molded cable for S55XBE; 100 feet (30.5 m) long, 4 conductors, overall foil shield and drain wire.	Use with S55XBE viewing heads.
ASY55XBE-200	200 ft. cable assembly	Factory molded cable for S55XBE; 200 feet (60 m) long, 4 conductors, overall foil shield and drain wire.	Use with S55XBE viewing heads.
ASY785	50 ft. cable assembly	Factory molded cable 50 feet (15 m) long without LEDs.	Use with S70X and S80X viewing heads.
ASY785-200	200 ft. cable assembly	Factory molded cable 200 feet (60 m) long without LEDs.	Use with S70X and S80X viewing heads.
ASY786	Cable	Field cable side connector with two LEDs for S70X and S80X.	Use with S70X and S80X viewing heads.
ASYU2S	Cable	Factory molded cable 50 feet (15 m) long with 12 conductors	Use with U2S series all-in-one viewing head.
ASYU2S-100	Cable	Factory molded cable 100 feet (30 m) long with 12 conductors	Use with U2S series all-in-one viewing head
ASYU2S-200	Cable	Factory molded cable 200 feet (60 m) long with 12 conductors	Use with U2S series all-in-one viewing head
ASYU2S-300	Cable	Factory molded cable 300 feet (90 m) long with 12 conductors	Use with U2S series all-in-one viewing head
C22S	12 conductor cable	Field extension cable for U2S; 12 conductors, 10 used.	Use with U2S series all-in-one viewing head/processor.
C330S	Scanner cable	4-conductor viewing head to processor interconnecting cable with foil and drain wire.	Use with S70X, S80X, and S55XBE viewing heads.
DSP3992/U	P5XX demo kit	Demonstration kit including P532DC, P522DC, S550BE, and cable with 24VDC converter.	Use for sales demo.
DSP3993/U	Watchdog demo kit	Demonstration kit including P222DC, S256BE, and cable with 24VDC converter for flare monitoring system - WATCHDOGIIIBE.	Use for sales demo.
DSP3994/U	U2S demo kit	U2S and cable with 24VDC converter.	Use for sales demo.
DSP3995/U	Accessory demo kit	Demonstration kit includes accessories ISO-unit and M701-2SS.	Use for sales demo.

Part Number	Description	Product Details	Where to Use
FASA	Glass/Quartz fiber optics	Custom built to length and accessories. Suitable for oil and coal, focal lens assembly.	Contact your local sales representative to provide quotation for your application.
ISO-UNIT	Sealing union	Isolation unit for low back pressure application. Black anodized aluminum body, quartz lens. 1in NPTF connection at both ends with 1/2in NPTF for purge connection.	Maximum back pressure 50 PSI (345 kPa) and maximum temperature of 400°F (204°C).
ISO-UNITSS	Sealing union	Isolation unit for low back pressure application. Stainless steel body, quartz lens. 1in NPTF connection at both ends with 1/2in NPTF for purge connection.	Maximum back pressure 50 PSI (345 kPa) and maximum temperature of 400°F (204°C).
ISO-UNITHPGT	Sealing union	Isolation unit for high back pressure application. Stainless steel body, quartz lens. 1in NPTF connection at both ends with 1/2in NPTF for purge connection.	Maximum back pressure 500 PSI (3450 KPA) and maximum temperature of 400°F (204°C).
M3204	Vortex air cooler	Use in conjunction with cooling jacket for S70X and S55XBE. 275Btu/hr (69 kcal/hr) 4 SCFM (113 SLPM).	Use with cooling jacket.
M3208	Vortex air cooler	Use in conjunction with cooling jacket for S70X and S55XBE. 550Btu/hr (139 kcal/hr) 8 SCFM (227 SLPM).	Use with cooling jacket.
M3210	Vortex air cooler	Use in conjunction with cooling jacket for S70X and S55XBE. 650Btu/hr (164 kcal/hr) 10 SCFM (283SLPM).	Use with cooling jacket.
M-701-1	2in NPT pipe mount	2in NPT pipe slip-on to 1in NPT connection.	Use when burner is provided with 2inslip-on pipe.
M-701-2	2in NPT pipe mount	2in NPTF pipe-mounted swivel mount assembly to 1in NPTF 3-1/2in diameter and 2-3/8in deep.	Use when burner is provided with 2in threaded pipe.
M-701-2-FLG	2in flange mount	2in flange mount with multiple mounting holes to 1in NPTF.	Windbox mounted.
M-701-2-SS	2in NPT pipe mount	2in NPTF stainless steel pipe swivel mount assembly to 1in NPTF 3-1/2in diameter and 2-3/8in deep.	Use when burner is provided with 2in unthreaded pipe.
M-701-3	3 bolt swivel mount	4-1/2in diameter, 3-bolt swivel mount assembly. 3 mounting holes. 1in NPTF connection to viewing head side.	Windbox mounted.
M-701-3P	3in NPT pipe mount	3in threaded pipe connection with swivel mount to 1in NPTF to viewing head.	Used commonly in coal-fired power plants.
M-701-4	2 bolt swivel mount	4in, 2-bolt windbox or burner front mounted swivel mount to 1in NPTF for viewing head connection.	Windbox mounted.
M-702-6	Orifice set	Set of orifices to reduce signal level.	Use with all viewing heads.
R-518-12	Insulating nipple	1in NPT M/M both side heat and electrical insulating nipple.	Use with all 1in NPT connection.
R-518-13	Insulating nipple	1/2in NPT M/M both side heat and electrical insulating nipple.	Use with all 1/2in NPT connection.
R-518-CL12-HTG	Locking coupler	1in NPT locking coupler for disconnect of viewing head for S55XBE and S70X with DA-1.	Use with R-518-PT12, R-518-PT12L.
R-518-CL12-PG	Locking coupler	1in NPT locking coupler with purge connection for use with all viewing heads with 1in NPT connection.	Use with R-518-PT12, R-518-PT12L.
R-518-CL13-HTG	Locking coupler	1/2in NPT locking coupler for disconnect of viewing heads with 1/2in connection.	Use with R-518-PT13, R-518-PT13L.
R-518-PT12	Locking coupler	1in NPT ULTEM insulating locking coupler adapter.	Use with R-518-CL12-HTG, R-518-CL12-PG.
R-518-PT12L	Locking coupler	1in NPT ULTEM insulating locking coupler adapter.	Use with R-518-CL12-HTG, R-518-CL12-PG.
R-518-PT13	Locking coupler	1/2in NPT ULTEM insulating locking coupler adapter.	Use with R-518-CL13-HTG.
R-518-PT13L	Locking coupler	1/2in NPT ULTEM insulating locking coupler adapter.	Use with R-518-CL13-HTG.
R-518-11	Cable connector	Cable side connector for S55XBE for use with C330S cable.	Use with S55XBE viewing heads and C330S cable.

For More Information

The Honeywell Thermal Solutions family of products includes Honeywell Combustion Safety, Honeywell Combustion Service, Eclipse, Exothermics, Hauck, Kromschröder and Maxon. To learn more about our products, visit ThermalSolutions.honeywell.com or contact your Honeywell Sales Engineer.

Honeywell Process Solutions

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