



**Analogue or digital “Point-of-Use”  
gas detection transmitter to  
detect toxic, corrosive and  
combustible gases**

# Satellite XT



## Applications:

### Provides gas detection for:

- Gas cabinets
- Valve manifold box
- Equipment enclosure
- Ambient breathing zone
- Gas storage rooms
- OEM equipment

## Advantages:

- Fast, reliable, specific gas detection
- Continuous real-time monitoring
- Interchangeable intelligent sensor cell
- No dynamic gas calibration required
- Generic sensor head electronics
- Low cost of ownership
- No moving parts to wear down or replace

**The Satellite XT is the simple solution for all “Point-of-Use” gas detection needs. Based upon the market’s smallest and most reliable electrochemical cell technology, the Satellite XT offers flexibility, simplicity and ease of application. The Satellite XT can be purchased in either an analogue or digital configuration, allowing it to interface with new or existing facility control technologies.**

The digital Satellite XT is built on LonWorks® technology. Life safety systems built on a LonWorks® network platform allow users to leverage the cost efficiencies of distributed controls, while maintaining the integrity and reliability necessary for code compliant safety applications.

The Satellite XT is an intelligent gas detection transmitter which utilises a unique electrochemical sensor to detect toxic, corrosive, and combustible gas. The Satellite XT is a “Point-of-Use” monitor normally located at or near a potential source of gas release. Field accessories allow sampling options for various environments including in-situ duct detection and extractive designs for harsh or remote areas. Typical installations for gas detection sampling include gas cabinet exhaust ducting, valve manifold boxes, equipment enclosures and ambient breathing zones.

Each digital Satellite XT transmitter bears a unique address for use on a LonWorks® network. This feature allows it to participate in a community of other intelligent LonWorks® devices, which when considered together, comprise a life safety system network. Gas concentration and alarm information are both displayed locally at the Satellite XT, as well as distributed onto the LonWorks® network for use by other field devices. The Satellite XT provides complete programmability of all monitoring variables including gas type, alarm levels, and maintenance status.





## Gas Detection with Combustible Gas Sensors

Substance / Sensor		Sensor Part-No	Nominal Range		Comments
CH <sub>4</sub>	Methane	9602-9900	0 ... 100	LEL	for Satellite C only / Standard
CH <sub>4</sub>	Methane	9602-9901	0 ... 100	LEL	for Satellite C only
CH <sub>4</sub>	Methane	9602-9902	0 ... 100	LEL	for Sat-Ex C Version
CH <sub>4</sub>	Methane	9602-9903	0 ... 100	LEL	for Sat-Ex C Version
CH <sub>4</sub>	Methane	9602-9905	0 ... 100	LEL	for Sat-Ex C Version

Further gases and ranges on request

## Pyrolyzer Module XT Gas Detection with Electrochemical Cells

Substance / Sensor		Sensor Part-No	Nominal Range	
C <sub>4</sub> F <sub>6</sub>	Hexafluoro-1,3-butadiene	9602-9732	0....50.0	ppm
C <sub>5</sub> F <sub>8</sub>	Octafluorocyclopentene	9602-9730	0 ... 20.0	ppm
CH <sub>3</sub> F	Methyl Fluoride	9602-9720	0 ... 0.500	% vol.
DCE 1,2	Di-chloro-ethylene 1,2	9602-9600	0 ... 1000	ppm
NF <sub>3</sub>	Nitrogen Trifluoride	9602-9700	0 ... 50.0	ppm
SF <sub>6</sub>	Sulphur Hexafluoride	9602-9710	0 ... 0.500	% vol.

Further gases and ranges on request



## Sensors

### 1. How do electrochemical sensors work?

All Honeywell Analytics electrochemical sensor cells are amperometric type i.e. are fuel cell type acting like batteries, where one component, in order to generate a current, is missing: the gas that should be detected (target gas).

The target gas diffuses through a gas permeable membrane into the sensor where an electrochemical reaction results in a low current that is direct proportional to the measured gas concentration (generally in nA/ppm reading).

### 2. How does the electrochemical sensor work with the detection instrument?

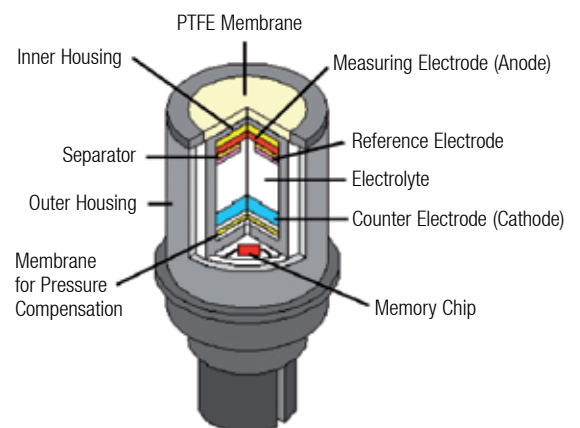
The current is amplified to a signal that is processed through an electronic circuit in order to display the real-time gas concentration.

The zero current of the electrochemical cell is always present and is monitored and suppressed by the electronics.

There are different ways to adjust the correct amplification factor of the electronics. Honeywell Analytics has created the "intelligent sensor" which features a built-in PROM. All relevant sensor data such as sensitivity, target gas, date of first calibration, calibration data, zero current, and alarm levels are programmed onto this chip. Our detectors can read this data and adjust the amplifying factor automatically.

### 3. How does a sensor self test work?

All relevant sensor data (ref. Pos 2) are programmed onto the PROM inside the electrochemical sensor. Our detectors can read this data. Every 24 hours an automatic sensor self-test is performed, which compares an electronically initiated sensor signal with the stored calibration curve. This makes sure that the sensors are always within specification that is set during the first calibration. If the sensor is out of specification the instrument will indicate that the sensor either needs to be checked or needs to be replaced.



# Gas Sensors 9602

## Gas Detection with Electrochemical Cells

Substance / Sensor		Sensor Part-No	Nominal Range		Comments
AsH <sub>3</sub>	Arsine (3 El.)	9602-6001	0 ... 1.00	ppm	
AsH <sub>3</sub>	Arsine (2 El.)	9602-6000	0 ... 1.00	ppm	Special application
AsH <sub>3</sub>	Arsine (2 El.)	9602-6002	0 ... 10.0	ppm	Special application
B <sub>2</sub> H <sub>6</sub>	Diborane	9602-6200	0 ... 1.00	ppm	
Br <sub>2</sub>	Bromine	9602-6800	0 ... 5.00	ppm	
Cl <sub>2</sub>	Chlorine	9602-5300	0 ... 5.00	ppm	
ClF <sub>3</sub>	Chlorine Trifluoride	9602-7410	0 ... 1.00	ppm	
ClO <sub>2</sub>	Chlorine Dioxide	9602-7400	0 ... 1.00	ppm	
CO	Carbon Monoxide	9602-5400	0 ... 500	ppm	
COCl <sub>2</sub>	Phosgene	9602-6600	0 ... 1.00	ppm	
F <sub>2</sub>	Fluorine	9602-6400	0 ... 5.00	ppm	
GeH <sub>4</sub>	Germane	9602-6900	0 ... 5.0	ppm	
H <sub>2</sub>	Hydrogen (1%)	9602-5100	0 ... 1.000	% vol.	
H <sub>2</sub>	Hydrogen (4%)	9602-5101	0 ... 4.00	% vol.	Special range
H <sub>2</sub> S	Hydrogen Sulphide	9602-5200	0 ... 100	ppm	
H <sub>2</sub> S	Hydrogen Sulphide (org.)	9602-5201	0 ... 30.0	ppm	Special application
H <sub>2</sub> Se	Hydrogen Selenide	9602-5600	0.00 ... 5.00	ppm	
HBr	Hydrogen Bromide	9602-7000	0 ... 30.0	ppm	
HCl	Hydrogen Chloride	9602-5800	0 ... 30.0	ppm	
HCN	Hydrogen Cyanide	9602-5700	0 ... 30.0	ppm	
HF	Hydrogen Fluoride	9602-6500	0 ... 10.0	ppm	
HMDS	Hexamethyldisilazane	9602-6715	0 ... 0.500	% vol.	
HMDS	Hexamethyldisilazane	9602-6714	0 ... 500	ppm	
N <sub>2</sub> H <sub>4</sub>	Hydrazine	9602-7600	0 ... 1.00	ppm	
NH <sub>3</sub>	Ammonia 100ppm	9602-6704	0 ... 100	ppm	Standard
NH <sub>3</sub>	Ammonia 1000ppm	9602-6705	0 ... 1000	ppm	Standard, for higher range
NO	Nitric Oxide	9602-7200	0 ... 250	ppm	
NO <sub>2</sub>	Nitrogen Dioxide	9602-7300	0 ... 25.0	ppm	
O <sub>2</sub>	Oxygen	9602-5500	0 ... 25.0	% vol.	
O <sub>3</sub>	Ozone	9602-7100	0 ... 1.00	ppm	
O <sub>3</sub>	Ozone	9602-7101	0 ... 1.00	ppm	Exhaust monitoring
PH <sub>3</sub>	Phosphine (2 El.)	9602-6100	0 ... 1.00	ppm	Special application
PH <sub>3</sub>	Phosphine (3 El.)	9602-6101	0 ... 1.00	ppm	
SiH <sub>4</sub>	Silane	9602-6300	0 ... 50.0	ppm	
SO <sub>2</sub>	Sulphur Dioxide	9602-5900	0 ... 25.0	ppm	
TEOS	Tetraethyl Silicate	9602-7500	0 ... 100	ppm	
TMB	Trimethyl Borate	9602-7510	0 ... 200	ppm	
TMP	Trimethyl Phosphite	9602-7800	0 ... 30.0	ppm	

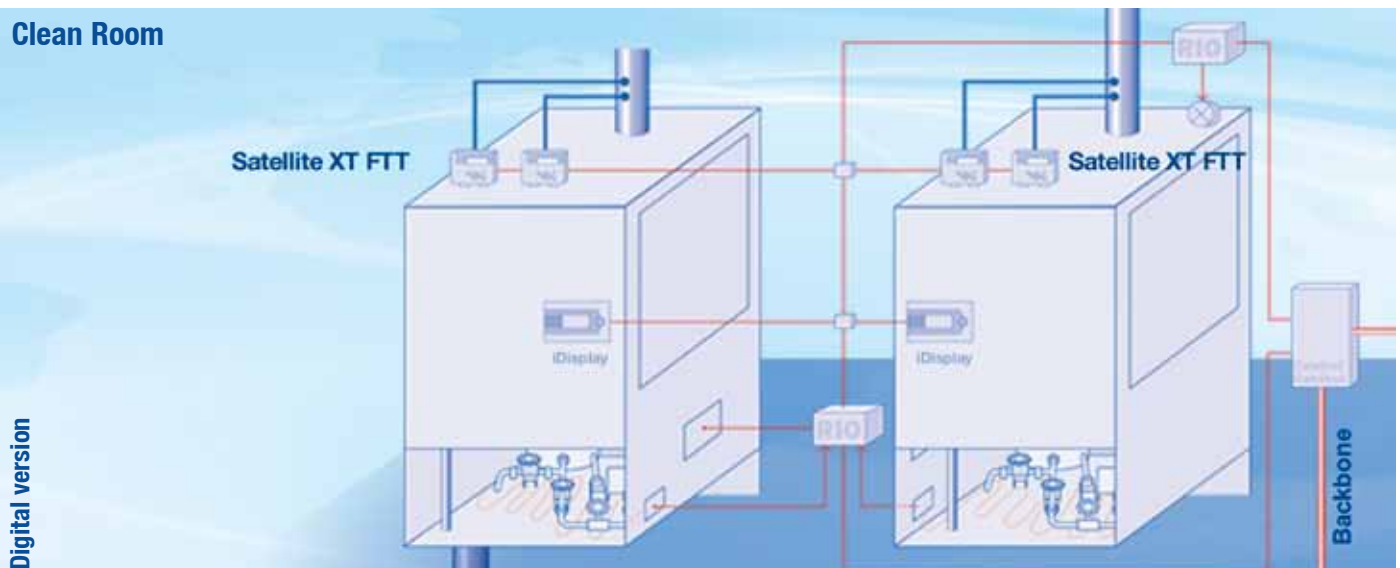
Note: Further gases and ranges on request

# Technical Specifications

## Satellite XT FTT

		Satellite XT FTT	Satellite XT FTT/R	Satellite XT FTT/C	Satellite XT R
<b>Power requirements</b>	<b>Voltage</b>	12 to 24 VDC	12 to 24 VDC	12 to 24 VDC	12 to 24 VDC
	<b>Consumption</b>	max. 0.6W	max. 1.4W	max. 0.9W	max. 1.4W
<b>Network</b>	<b>Data transmission</b>	78Kb per second	78Kb per second	78Kb per second	
	<b>Wiring topologies</b>	Free, e.g. Bus, Star, Loop, or Mixed	Free, e.g. Bus, Star, Loop, or Mixed	Free, e.g. Bus, Star, Loop, or Mixed	
<b>Wiring</b>	<b>Network</b>	4-wire shielded cable 2 x 2 x 1.0mm <sup>2</sup> / 17 AWG (approx. 2m delivered with instrument)	4-wire shielded cable 2 x 2 x 1.0mm <sup>2</sup> / 17 AWG (approx. 2m delivered with instrument)	4-wire shielded cable 2 x 2 x 1.0mm <sup>2</sup> / 17 AWG (approx. 2m delivered with instrument)	4-wire shielded cable 2 x 2 x 1.0mm <sup>2</sup> / 17 AWG (approx. 2m delivered with instrument)
	<b>Relay contacts</b>		6-wire shielded cable 6 x 0.25mm <sup>2</sup> / 23 AWG (approx. 3m delivered with instrument)		6-wire shielded cable 6 x 0.25mm <sup>2</sup> / 23 AWG (approx. 3m delivered with instrument)
<b>Relay outputs</b>	<b>Contacts</b>		3 x SPST (Single-Pole Single-Throw)		3 x SPST (Single-Pole Single-Throw)
	<b>Max. ratings</b>		250 VAC / 30 VDC, 2A		250 VAC / 30 VDC, 2A
<b>Graphic display</b>		122 x 32 dots with backlight	122 x 32 dots with backlight	122 x 32 dots with backlight	122 x 32 dots with backlight
<b>Status LED</b>		Green	Green	Green	Green
<b>Keypad</b>		6 touch-sensitive membrane function keys	6 touch-sensitive membrane function keys	6 touch-sensitive membrane function keys	6 touch-sensitive membrane function keys
<b>Physical dimensions LxWxD</b>	<b>Size</b>	145 x 95 x 50mm 5.7" x 3.7" x 2.0"	145 x 95 x 50mm 5.7" x 3.7" x 2.0"	145 x 95 x 50mm 5.7" x 3.7" x 2.0"	145 x 95 x 50mm 5.7" x 3.7" x 2.0"
	<b>Weight</b>	480g (17oz)	650g (23oz)	520g (18oz)	620g (22oz)
<b>Mounting</b>		Special mounting plate (delivered with instrument)	Special mounting plate (delivered with instrument)	Special mounting plate (delivered with instrument)	Special mounting plate (delivered with instrument)
<b>Housing protection class</b>	<b>IP 52 (option: IP 65)</b>	IP 52 (option: IP 65)	IP 52 (option: IP 65)	IP 52 (option: IP 65)	
<b>RFI / EMC</b>		EN 55022 EN 50082-2	EN 55022 EN 50082-2	EN 55022 EN 50082-2	EN 55022 EN 50082-2
<b>Operating conditions</b>	<b>Temperature</b>	-20°C up to +40°C -4°F up to +104°F	-20°C up to +40°C -4°F up to +104°F	-20°C up to +40°C -4°F up to +104°F	-20°C up to +40°C -4°F up to +104°F
	<b>Pressure</b>	700 up to 1300hPa	700 up to 1300hPa	700 up to 1300hPa	700 up to 1300hPa
	<b>Humidity</b>	20 up to 90% r.h.	20 up to 90% r.h.	20 up to 90% r.h.	20 up to 90% r.h.
	<b>Part number</b>	9602-0400	9602-0405	9602-0450	9602-0505

## Clean Room



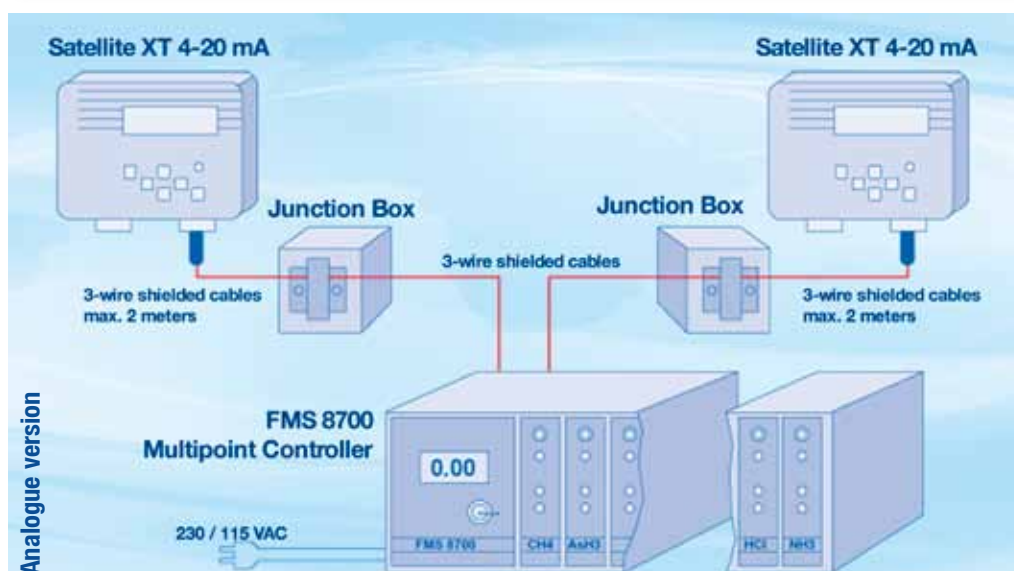
Digital version

Backbone



## Satellite XT 4-20 mA

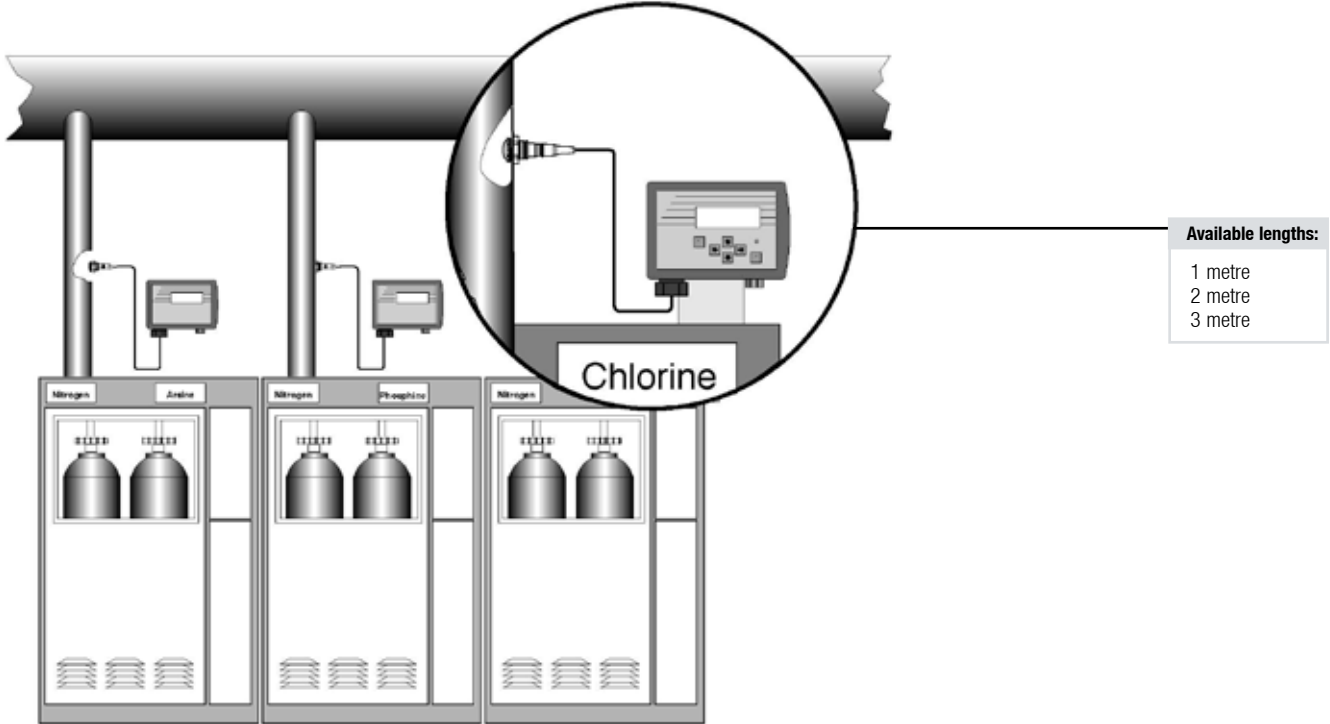
		Satellite XT 4-20 mA	Satellite XT 4-20 mA/R	Satellite XT4-20 mA/C
<b>Power Requirements</b>	<b>Voltage</b>	12 to 24 VDC	12 to 24 VDC	12 to 24 VDC
	<b>Consumption</b>	max. 1W	max. 1.8W	max. 1.4W
<b>Analogue Signal Output</b>	<b>Monitoring mode</b>	4-20mA	4-20mA	78Kb per second
	<b>Warning condition</b>	2.8-4 mA 0.1Hz	2.8-4 mA 0.1Hz	2.8-4 mA 0.1Hz
	<b>Maintenance mode</b>	2.4-4 mA 1Hz	2.4-4 mA 1Hz	2.4-4 mA 1Hz
	<b>Fault range</b>	0-2mA	0-2mA	0-2mA
	<b>Analogue interface</b>	3-wire shielded cable 3x1.0mm <sup>2</sup> / 17 AWG (approx. 2m delivered with instrument)	3-wire shielded cable 3x1.0mm <sup>2</sup> / 17 AWG (approx. 2m delivered with instrument)	3-wire shielded cable 3x1.0mm <sup>2</sup> / 17 AWG (approx. 2m delivered with instrument)
<b>Wiring</b>	<b>Relay contacts</b>		6-wire shielded cable 6x0.25mm <sup>2</sup> / 23 AWG (approx. 3m delivered with instrument)	
	<b>Relay Outputs</b>		3 x SPST (Single-Pole Single-Throw)	
<b>Relay Outputs</b>	<b>Contacts</b>		250 VAC / 30 VDC, 2A	
	<b>Max. ratings</b>			
<b>Graphic Display</b>		122 x 32 dots with backlight	122 x 32 dots with backlight	122 x 32 dots with backlight
<b>Status LED</b>		Green	Green	Green
<b>Keypad</b>		6 touch-sensitive membrane function keys	6 touch-sensitive membrane function keys	6 touch-sensitive membrane function keys
<b>Physical Dimensions LxWxD</b>	<b>Size</b>	145 x 95 x 50mm 5.7" x 3.7" x 2.0"	145 x 95 x 50mm 5.7" x 3.7" x 2.0"	145 x 95 x 50mm 5.7" x 3.7" x 2.0"
	<b>Weight</b>	480g (17oz)	650g (23oz)	520g (18oz)
<b>Mounting</b>		Special mounting plate (delivered with instrument)	Special mounting plate (delivered with instrument)	Special mounting plate (delivered with instrument)
<b>Housing Protection Class</b>	IP 52 (option: IP 65)	IP 52 (option: IP 65)	IP 52 (option: IP 65)	IP 52 (option: IP 65)
<b>RFI / EMC</b>		EN 55011 EN 50082-2	EN 55022 EN 50082-2	EN 55011 EN 50082-2
<b>Operating Conditions</b>	<b>Temperature</b>	-20°C up to +40°C -4°F up to +104°F	-20°C up to +40°C -4°F up to +104°F	-20°C up to +40°C -4°F up to +104°F
	<b>Pressure</b>	700 up to 1300hPa	700 up to 1300hPa	700 up to 1300hPa
	<b>Humidity</b>	20 up to 90% r.h.	20 up to 90% r.h.	20 up to 90% r.h.
	<b>Part number</b>	9602-0200	9602-0205	9602-0250



# Applications



## Sensor Extension



## XT Series

### Advantages:

#### XT Series:

- Modular set up to meet the needs of today and tomorrow
- DIN rail mounting for easy installation
- Small footprint

#### Extractive Module XT:

- In-situ flow control
- Low maintenance
- Easy installation

### Options for the Satellite XT:

The XT Series is a product generation designed to meet various gas detection and life safety requirements. The XT Series is built-up of the Satellite XT, the Extractive Module XT, and the Pyrolyzer Module XT. The modular set up allows users to easily change from "Point-of-Use" detection to an extractive detection.

### Extractive Module XT:

The Extractive Module XT is the ideal add-on component which allows for gas sampling and detection in various environments, such as in-situ duct detection and detection in harsh or remote areas. Its primary function is the transportation of gas samples from the monitored point to the sensor. Typical installations include gas cabinet exhaust ducts, valve manifold boxes, and equipment enclosures, as well as installations under waffle slabs.

### Pyrolyzer Module XT:

The Pyrolyzer Module XT completes the XT Series allowing for the detection of gases with Fluorine content. The central component of the Pyrolyzer Module XT, is the Pyrolyzer itself, which converts the gases to mineral acids.



# Our Product Range



## 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 4 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

[www.honeywellanalytics.com](http://www.honeywellanalytics.com)

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