

# Portable Gas Detectors Product Guide



# Combustible Gas Detectors

## Detect Combustible Gases in General with High Sensitivity

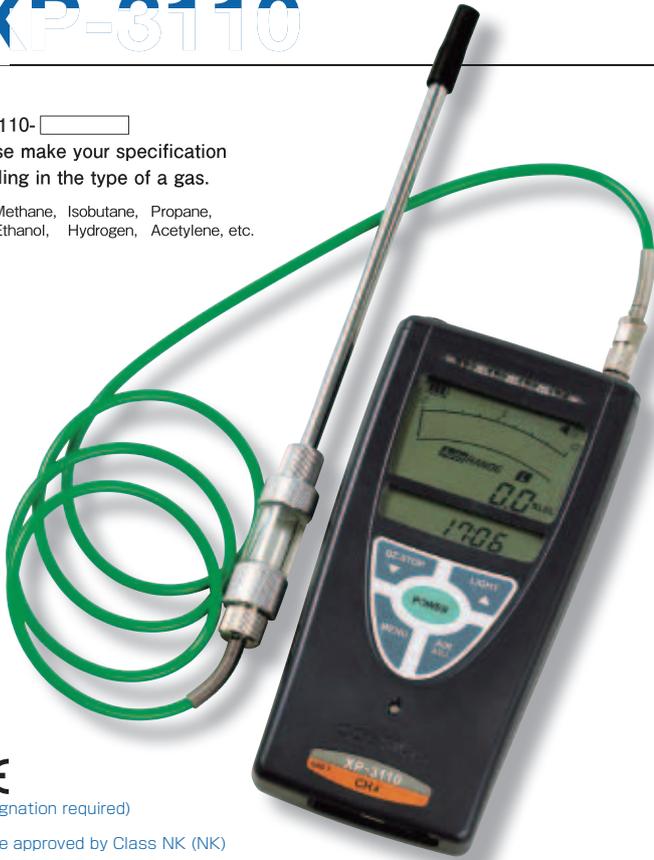
For measurement of combustible gas concentration of 0-10/0-100% LEL.

# XP-3110



XP-3110-  
Please make your specification by filling in the type of a gas.

Ex: Methane, Isobutane, Propane, Ethanol, Hydrogen, Acetylene, etc.



**CE**  
(Designation required)

Type approved by Class NK (NK)  
No.06T605 (Designation required)

### Features

- For measurement of combustible gas concentration of 0-10/0-100%LEL.
- Suitable for monitoring a risk of explosion.
- New digital display with a simulated analog scale.
- Built-in correction factors for up to 5 flammable gases.(factory option)

### Specifications

Model	XP-3110
Gas Detected	Combustible gases and vapors (specify gas to be detected)
Detection Principle	Catalytic combustion
Sampling Method	Extractive
Detection Range	0-100%LEL
Indication Accuracy (Under identical conditions)	±5% of full scale
Alarm Set Value	20%LEL
Display	LCD digital (with backlight) Digital display: 0-100%LEL Digital bar display: Auto range changeover 0-10%LEL (L range) 0-100%LEL (H range)
Alarm Indication	Gas alarm: Intermittent buzzer, Red lamp flashing Trouble alarm: Buzzer, Red lamp flashing, LCD display
Explosion-Proof Structure	Exibd II CT3
Operation Temperature	-20 to 50°C
Power Source	4×AA alkaline dry cells
Battery Life *1	Up to 20 hours
Dimensions	W82×H162×D36mm
Weight	Approx. 450g (16oz.) (excluding batteries)
Standard Accessories	Soft case, 4×AA alkaline dry cells, Gas sampling hose (1m), Probe with filter/moisture trap, spare filters
Optional Accessories	2-30m gas sampling hose, Gas dilution probe, Data download software (CD-ROM software and USB cable)

\*1 Battery life may vary with ambient conditions, conditions of use, storage period, battery manufactures, etc.

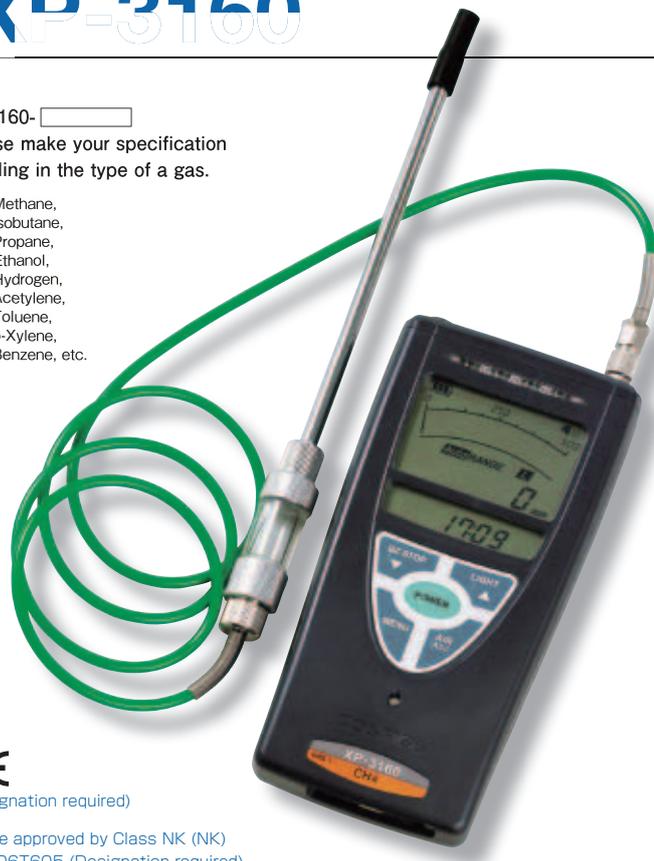
Super-sensitive and best suited for detecting gases in ppm range.

# XP-3160



XP-3160-  
Please make your specification by filling in the type of a gas.

Ex: Methane, Isobutane, Propane, Ethanol, Hydrogen, Acetylene, Toluene, o-Xylene, Benzene, etc.



**CE**  
(Designation required)

Type approved by Class NK (NK)  
No.06T605 (Designation required)

### Features

- High sensitivity detector with 0-500ppm measuring range (Standard).
- Best suited for measuring combustible gases in the ppm range.
- Lightweight 450g (16 oz.) and compact.
- Built-in correction factors for up to 5 flammable gases.(factory option)

### Specifications

Model	XP-3160
Gas Detected	Combustible gases and vapors (specify gas to be detected)
Detection Principle	Catalytic combustion
Sampling Method	Extractive
Detection Range	0-5,000ppm or 0-10,000ppm
Indication Accuracy (Under identical conditions)	H range: ±5% L range: ±10%
Alarm Set Value	250 or 500ppm
Display	LCD digital (with backlight) Digital display: 0-5,000ppm or 0-10,000ppm Digital bar display: Auto range changeover 0-500ppm or 0-1,000ppm (L range) 0-5,000ppm or 0-10,000ppm (H range)
Alarm Indication	Gas alarm: Intermittent buzzer, Red lamp flashing Trouble alarm: Buzzer, Red lamp flashing, LCD display
Explosion-Proof Structure	Exibd II CT3
Operation Temperature	-20 to 50°C
Power Source	4×AA alkaline dry cells
Battery Life *1	Up to 20 hours
Dimensions	W82×H162×D36mm
Weight	Approx. 450g (16oz.) (excluding batteries)
Standard Accessories	Soft case, 4×AA alkaline dry cells, Gas sampling hose (1m), Probe with filter/moisture trap, spare filters
Optional Accessories	2-30m gas sampling hose, Gas dilution probe, Data download software (CD-ROM software and USB cable).

\*1 Battery life may vary with ambient conditions, conditions of use, storage period, battery manufactures, etc.

For measurement of high concentration gases up to 100vol%.

# XP-3140

Type of Gas Detected	Detection Principle
 Combustible gas	 Thermal conductivity sensor
 Others	

XP-3140-

Please make your specification by filling in the type of a gas.

Ex: Methane, Hydrogen, Helium, Argon, Butane, Carbon dioxide, etc.



(Designation required)

Type approved by Class NK (NK)  
No.06T605 (Designation required)

## Features

- For measurement of high concentration gas up to 100vol%.
- Suitable for inspecting the amount of gas remaining in tanks.
- Extended battery life of up to 30 hours.

## Specifications

Model	XP-3140
Gas Detected	Methane, Propane, Argon, Carbon dioxide, etc. (specify gas to be detected)
Detection Principle	Thermal conductivity
Sampling Method	Extractive
Detection Range	0-100vol%
Indication Accuracy (Under identical conditions)	H range: $\pm 5\%$ L range: $\pm 10\%$
Alarm Set Value	50vol%
Display	LCD digital (with backlight) Digital display: 0-100vol% Digital bar display: Auto range changeover 0-10vol% or 0-30vol% (L range) 0-100vol% (H range)
Alarm Indication	Gas alarm: Intermittent buzzer, Red lamp flashing Trouble alarm: Buzzer, Red lamp flashing, LCD display
Explosion-Proof Structure	Exibd II CT3
Operation Temperature	0 to 40°C
Power Source	4×AA alkaline dry cells
Battery Life *1	Up to 30 hours
Dimensions	W82×H162×D36mm
Weight	Approx. 450g (16oz.) (excluding batteries)
Standard Accessories	Soft case, 4×AA alkaline dry cells, Gas sampling hose (1m), Probe with filter/moisture trap, spare filters
Optional Accessories	2-30m gas sampling hose, Gas dilution probe, Data download software (CD-ROM software and USB cable).

\*1 Battery life may vary with ambient conditions, conditions of use, storage period, battery manufactures, etc.

Simultaneous displays combustible gas and oxygen concentration.

# XP-3118

Type of Gas Detected	Detection Principle
 Combustible gas	 Oxygen concentration
	 Catalytic combustion sensor
	 Galvanic cell sensor

XP-3118-  -Oxygen

Please make your specification by filling in the type of a gas.

Ex: Methane, Isobutane, Propane, Ethanol, Hydrogen, Acetylene, etc.



(Designation required)

Type approved by Class NK (NK)  
No.06T605 (Designation required)

## Features

- Simultaneous monitoring of combustible gas and oxygen concentration.
- Perfect for compliance work, safety and environmental monitoring.
- Powerful built-in pump allows sample-draws up to 30 meters.

## Specifications

Model	XP-3118
Gas Detected	Combustible gases and vapors (specify gas to be detected)
Detection Principle	Catalytic combustion
Sampling Method	Extractive
Detection Range	0-100%LEL
Indication Accuracy (Under identical conditions)	$\pm 5\%$ of full scale value
Alarm Set Value	20%LEL
Display	LCD digital (with backlight) Digital display Digital bar display
Alarm Indication	Gas alarm: Intermittent buzzer, Red lamp flashing Trouble alarm: Buzzer, Red lamp flashing, LCD display
Explosion-Proof Structure	Exibd II BT3
Operation Temperature	0 to 40°C
Power Source	4×AA alkaline dry cells
Battery Life *1	Up to 20 hours
Dimensions	W82×H162×D36mm
Weight	Approx. 450g (16oz.) (excluding batteries)
Standard Accessories	Soft case, 4×AA alkaline dry cells, Gas sampling hose (1m), Probe with filter/moisture trap, spare filters
Optional Accessories	2-30m gas sampling hose, Gas dilution probe, Data download software (CD-ROM software and USB cable).

\*1 Battery life may vary with ambient conditions, conditions of use, storage period, battery manufactures, etc.

# Combustible Gas Detectors

## Powerful Tools for Detecting Combustible Gas and CFC

Extractive Type Combustible gas detector

### XP-702II Z



#### Features

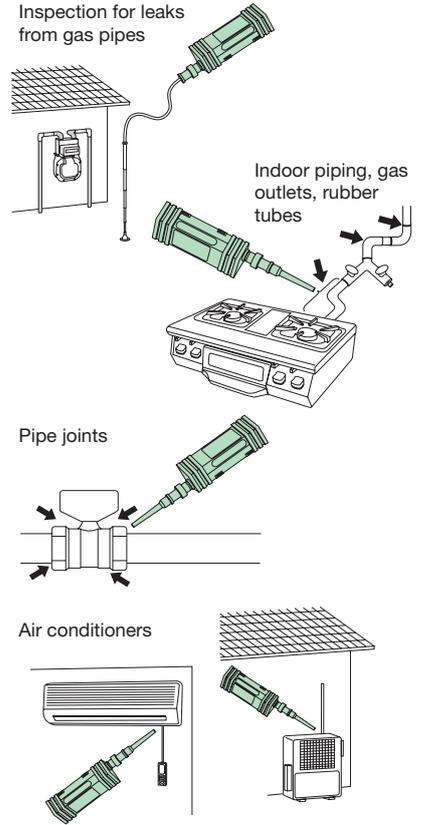
- Far more sensitive than leak detection liquid. Suitable for detecting small gas leaks.
- Detect two types of gas using a single Gas Detector.
- Extended battery life reduces running costs.

#### Specifications

Model	XP - 702II Z-B	XP - 702II Z-A	XP - 702II Z-F
Gas Detected	One type of combustible gas (e.g., city gas, LPG)	Two types of combustible gas (selectable)	CFC substitutes and combustible gas (selectable)
Detection Principle	Hot wire semiconductor		
Minimum Detectable	City gas, LPG, etc. : $3.3 \times 10^{-4}$ Pa · m <sup>3</sup> /S		
Leak Rate	CFCs : Leakage of 12.4 g/year (R-407C) or 11.2 g/year (R-410A)		
Minimum Detectable Concentration	City gas, LPG, etc. : 10ppm CFCs : 30ppm		
Response Time	3s or less (not including CFCs)		
Detection Indication	Intermittent buzzer and flashing lamp		
Power Source	3×AA alkaline dry cells		
Battery Life	Up to 18 hours (by alkaline dry cells) at constant temperature and humidity		
Explosion-Proof Structure	Sensor: Pressurization, Other parts: Intrinsic safety		
Operating Temperature	- 20 to 50°C		
Dimensions	W60 × H140 × D40mm (excluding protrusions)		
Weight	Approx. 260g (excluding batteries)		
Standard Accessories	Probe with filter/moisture trap, Check gas, Standard attachment, 3 × AA alkaline dry cells, Hand strap, Spare filters		
Optional Accessories	Probe for testing roadway surfaces, Telescopic gas probe, Earphones, etc.		

- \*1 Battery life may vary with ambient conditions, conditions of use, storage period, battery manufacturers, etc.  
 \*2 The gas probe set is available in four types. Contact us for details.  
 \*3 Contact us for information on the types of gas that can be detected.

#### Example of how XP-702II Z is used.



CE  
(Designation required)

Cart Type high performance gas detector

### XP-707II



#### Features

- Compact storage.
- Available to monitor in low gas concentration. (from 0-30ppm range)
- Auto-zero adjustment function.
- Self-diagnosis function.
- Available to adjust alarm sound loudness.

#### Specifications

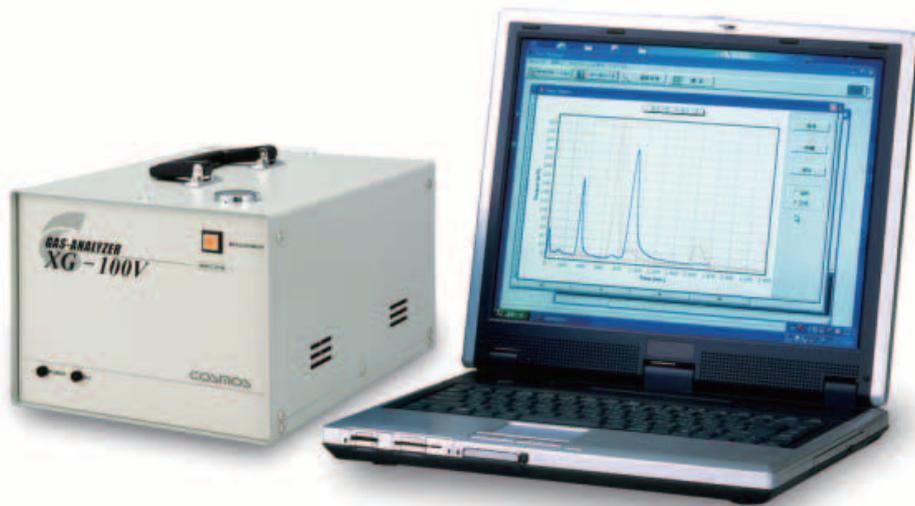
Model	XP-707 II
Gas Detected	Natural gas (CH <sub>4</sub> based)
Detection Principle	Methane selective hot wire semiconductor
Sampling method	Diffusion
Detection Range	0-30ppm, 0-100ppm, 0-10,000ppm (3 ranges: S, L, H)
Alarm Set Value	L/H range: 20ppm (intermittent sound), 100ppm (continuous sound) S range: 0-30ppm (intermittent sound)
Response time	Approx. 7s (90% response) (Gas detection)
Alarm Indication	By gas concentration indicator. Buzzer sound changes from intermittent to continuous when gas concentration exceeds alarm set value. (Sensor malfunction) Flash left lamp for gas concentration indication. Intermittent buzzer sound. *Sensor and pump are stopped automatically. (Pump malfunction) Flash right lamp for gas concentration indication. *Sensor and pump are stopped automatically.
Operating Temperature	0 to 40°C
Power Source	4 × D alkaline dry cells or D manganese dry cells
Battery life *1	Up to 80 hours (alkaline dry cells) Up to 20 hours (manganese dry cells)
Form	Cart type (Simple drip-proof structure)
Dimensions	W245 × H1125 × D435mm W245 × H790 × D280mm (in case of storage)
Weight	Approx. 4.9 kgs. (including batteries)

- \*1 Battery life may vary with ambient conditions, conditions of use, storage period, battery manufacturers, etc.



## Portable VOC Analyzer

# XG-100V



PC is not included.

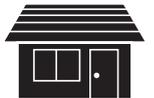
### Features

- **High precision measurement**
  - High separation performance by optimization of sensor and column.
  - The gas of indicator value class is used for calibration gas.
  - Correlate highly with the official method.
- **Field measurement**
  - Reduction in size and weight.
  - Display the measurement results immediately.
- **Simple operation**
  - Skip enrichment activity.
  - Store the measurement results automatically in a database.

### Applications

#### Construction/ House

- VOC measurement under construction.
- Confirmation of lowering VOC before delivery.
- Inspection and check of architectural materials.
- Inspection and check of furniture.



#### Environmental Control

- Performance check of degassing device and filter.
- Monitor test of VOC low concentration.



#### Chemistry

- Development of low VOC adhesive and paint.
- Development of low VOC adsorbent.
- Development of various chemical materials.



#### Electrical equipment/ Machinery

- Inspection of home electric appliances.
- Inspection of business equipments.
- Development of deodorization equipment.



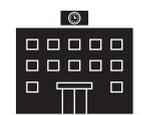
#### Automobile

- VOC measurement of car interior.
- Inspection of interior materials and parts.
- Condition check of chamber for measurement.
- Development of tires.



#### University/ Research institute

- Development of VOC decomposition catalyst.
- Development of VOC removal filter.
- Development of architectural materials.



### Specifications

Model	XG-100V
Substance Measured	Toluene, xylene, ethyl benzene, styrene
Measurement Range (measuring toluene)	Minimum detection limit: $4 \mu\text{g}/\text{m}^3$ , 1ppb Maximum detection limit: $3700 \mu\text{g}/\text{m}^3$ , 1000ppb
Repeatability	Within $\pm 5\%$ (RSD) (Toluene 70ppb)
Carrier Gas	Atmospheric air
Sample Injection Method	Direct injection by syringe (sample volume: 10ml)
Operating Temperature	5 to 35 degrees C
Power Source	100V AC, 50/60Hz
Dimensions	240 (W) × 190 (H) × 380 (D) mm
Weight	Approx. 10kg
Standard Accessories	Data analysis software (hardware requirement: Windows XP), calibration gas, 3 × syringes for sample injection, AC power cable, RS232C cable, USB-RS232C conversion cable, 8 × C alkaline dry cells.

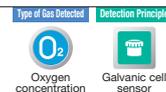
● VOC=Volatile Organic Compounds

# Oxygen Indicators

## Functionality and Operability Best Suited for Measuring Oxygen

COSMOS Personal Gas Monitor XX-2200 Series Oxygen indicator

### XO-2200



(Actual size)

#### Features

- Can be used continuously for 5000 hours.
- Available with loud buzzer, alarm lamp from 4 dimensions, peak hold function.
- Available with TWA (Time Weighted Average) gas concentration display, memory of peak value, and peak hold function.
- Thin, lightweight design.

#### Specifications

Model	XO-2200
Gas Detected	Oxygen (O <sub>2</sub> )
Detection Principle	Galvanic cell
Sampling Method	Diffusion
Detection Range (Service Range)	0-25vol% (25-50vol%)
Resolution	0.1vol%
Indication Accuracy *1	Within ±0.5vol%
Alarm Set Value 1st stage	19.5vol%
2nd stage	18.0vol%
Response Time *2	20s or less
Display Mode	LCD (Manual backlight)
Alarm Mode	Buzzer sounds, flashing red light, vibrator
Functions	Remaining battery level, peak hold, memory of peak value, alarm functions except gas alarm (sensor malfunction, remaining battery level, air-adjustment malfunction)
Operation Temperature	-10°C to 40°C, 30 - 90%RH (non-condensing)
Operation Air Pressure	Air pressure ±10%
Power Source	1 × AAA alkaline dry cell (LR 03)
Battery Life *3	Up to 5000 hours (at 20°C without alarm)
Dimensions	W65×H64×D22mm (excluding protrusions)
Weight	Approx. 75g (including battery)
Standard Accessories	1 × AAA alkaline dry cell, 1 × safety pin adaptor (with fixing screw)

\*1 Under identical measuring conditions.

\*2 Assuming 90% response and operating at 20 ±2°C

\*3 Battery life may vary with ambient conditions, conditions of use, storage period, battery manufactures, etc.

Extractive Type Oxygen indicator

### XP-3180



(Designation required)

Conforms to JIS T 8201  
Type approved by Class NK (NK)  
No.06T606 (Designation required)

#### Features

- Extractive type oxygen concentration indicator.
- Convenient for measuring oxygen concentration in containers where sampling is difficult.

#### Specifications

Model	XP-3180
Gas Detected	Oxygen
Detection Principle	Galvanic cell
Sampling Method	Extractive
Detection Range	0-25.0vol%
Indication Accuracy	±0.3vol%
(Under identical conditions)	(Compliant with JIS T 8201)
Alarm Set Value	18.0vol%
Display	LCD digital (with backlight) Digital display Digital bar display
Alarm Indication	Gas alarm: Intermittent buzzer, Red lamp flashing Trouble alarm: Buzzer, Red lamp flashing, LCD display
Explosion-Proof Structure	Exib II BT3
Operation Temperature	-10 to 40°C
Power Source	4×AA alkaline dry cells
Battery Life *1	Up to 100 hours
Dimensions	W82×H162×D36mm
Weight	Approx. 450g (16oz.) (excluding batteries)
Standard Accessories	Soft case, 4×AA alkaline dry cells, Gas sampling hose (1m), Probe with filter/moisture trap, Spare filters
Optional Accessories	2-30m gas sampling hose, Gas dilution probe, Data download software (CD-ROM software and USB cable).

\*1 Battery life may vary with ambient conditions, conditions of use, storage period, battery manufactures, etc.

# XO-326ALA/ALB



**XO-326ALA**

(Cable: 5m with a spool attached to the body)

**XO-326ALB**

(Cable: 1m coiled cord)

Conforms to JIS T 8201  
The Ship Equipment Inspection Society of Japan (HK)  
approved product (Designation required)

## Features

- Excellent functions and operability best suited for monitoring oxygen deficiency.
- Galvanic cell sensor's excellent stability.

## Specifications

Model	XO-326ALA	XO-326ALB
Gas Detected	Oxygen	
Detection Principle	Galvanic cell	
Sampling Method	Diffusion	
Meter Indication	3-digit LCD	
Detection Range	0-40.0vol%	
Indication Accuracy *1	±0.3vol% (±0.7vol% in JIS T 8201)	
Alarm Set Value	18.0vol%	
Alarm Indication	Intermittent buzzer at or below the Alarm Set Value Continuous buzzer on Low battery	
Response Time	20s or less (90% response)	
Power Source	2×AA (R6) manganese dry cells	
Explosion-Proof Structure	Intrinsic safety i3aG4	
Sensor Extension Cable	5m with a spool attached to the body	1m coiled cord
Dimensions	W66 × H170 × D29mm	W66 × H120 × D29mm
Weight	Approx. 300g	Approx. 250g
Standard accessories	Soft case, 2×AA (R6) manganese dry cells	
Optional Accessories	Sensor extension cable (5m/with a carrying bag)	

\*1 Under identical conditions.

# Toxic Gas Detectors

## Accurately Detect Low Concentration Toxic Gases, Using High Sensitivity Sensors

COSMOS Personal Gas Monitor XX-2200 Series Carbon monoxide detector

### XC-2200



(Actual size)

#### Features

- Can be used continuously for 5000 hours.
- Available with loud buzzer, alarm lamp from 4 dimensions, peak hold function.
- Available with TWA (Time Weighted Average) gas concentration display, memory of peak value, and peak hold function.
- Thin, lightweight design.

#### Specifications

Model	XC-2200
Gas Detected	Carbon Monoxide (CO)
Detection Principle	Electrochemical cell
Sampling Method	Diffusion
Measuring Range (Service Range)	0-300ppm (300-2,000ppm)
Resolution	0-350ppm: 1ppm / 350-2,000ppm: 50ppm
Indication Accuracy *1	Within ±30ppm
Alarm Set Value	50ppm (first stage), 150ppm (second stage), 150ppm·h (time weighted average)
Response Time *2	30s or less (90% of final reading)
Display Mode	LCD (Manual backlight)
Alarm Mode	Buzzer sounds, flashing red light, vibrator
Functions	Remaining battery level, peak hold, peak value memory, readout of time weighted average, alarm functions except gas alarm (time weighted average value, sensor malfunction, remaining battery level, zero-adjustment malfunction)
Operating Temperature	-10°C to 40°C, 30-90% RH (non-condensing)
Operating Air Pressure	Air pressure ±10%
Power Source	1 × AAA alkaline dry cell
Battery Life *3	Up to 5,000 hours (at 20°C with less than 20ppm)
Dimensions	W65 × H64 × D22mm (excluding protrusions)
Weight	Approx. 75g (including battery)
Standard Accessories	1 × AAA alkaline dry cell, 1 × safety pin adaptor (with fixing screw)

\*1 Under identical measuring conditions.

\*2 Operating at 20 ± 2°C.

\*3 Battery life may vary with ambient conditions, conditions of use, storage period, battery manufactures, etc.

COSMOS Personal Gas Monitor XX-2200 Series Hydrogen sulfide detector

### XS-2200



(Actual size)

#### Features

- Can be used continuously for 5000 hours.
- Available with loud buzzer, alarm lamp from 4 dimensions, peak hold function.
- Thin, lightweight design.

#### Specifications

Model	XS-2200
Gas Detected	Hydrogen Sulfide (H2S)
Detection Principle	Electrochemical cell
Sampling Method	Diffusion
Detection Range (Service Range)	0-30.0ppm (30.1-100ppm)
Resolution	0-35.0ppm: 0.1ppm 35-100ppm: 5ppm
Indication Accuracy *1	Within ±1.5ppm ±1digit
Alarm Set Value 1st stage	10.0ppm
2nd stage	15.0ppm
Response Time *2	30s or less
Display Mode	LCD (Manual backlight)
Alarm Mode	Buzzer sounds, flashing red light, vibrator
Functions	Remaining battery level, peak hold, memory of peak value, alarm functions except gas alarm(sensor malfunction, remaining battery level, air-adjustment malfunction)
Operation Temperature	-10°C to 40°C, 30-85%RH (non-condensing)
Operation Air Pressure	Air pressure ±10%
Power Source	1 × AAA alkaline dry cell
Battery Life *3	Up to 5,000 hours (at 20°C with less than 5 ppm)
Dimensions	W65 × H64 × D22mm (excluding protrusions)
Weight	Approx. 75g (including battery)
Standard accessories	1 × AAA alkaline dry cell, 1 × safety pin adaptor (with fixing screw)

\*1 Under identical measuring conditions.

\*2 Assuming 90% response and operating at 20 ± 2°C.

\*3 Battery life may vary with ambient conditions, conditions of use, storage period, battery manufactures, etc.

# XPS-7

Type of Gas Detected	Detection Principle
 Toxic gas	 Electrochemical cell sensor



## How to replace the sensor unit



Lift the snap lock and open the sensor cover.



Remove the sensor unit and insert the new sensor unit. Close the sensor cover.

## XPS-7 & Sensor Units



(Sensor units)

## Features

- Detect a range of gases with a single gas detector by exchanging the sensor unit.
- Cassette-type sensor units eliminate the need for gas detector adjustment.

### ● List of Detected Gases

Type	Gas	Full Scale	Type	Gas	Full Scale	Type	Gas	Full Scale
XDS-7NH	NH <sub>3</sub>	100ppm	XDS-7GH	GeH <sub>4</sub>	1ppm	XDS-7HS	H <sub>2</sub> S	50ppm
XDS-7SH	SiH <sub>4</sub>	25ppm	XDS-7CL	Cl <sub>2</sub>	5ppm	XDS-7CO	CO	250ppm
XDS-7DC	SiH <sub>2</sub> Cl <sub>2</sub>	25ppm	XDS-7CF	ClF <sub>3</sub>	1ppm	XDS-7DS	Si <sub>2</sub> H <sub>2</sub>	25ppm
XDS-7AH	AsH <sub>3</sub>	250ppb	XDS-7HC	HCl	25ppm	XDS-7F2	F <sub>2</sub>	5ppm
XDS-7PH	PH <sub>3</sub>	1ppm	XDS-7HF	HF	10ppm	XDS-7O <sub>3</sub>	O <sub>3</sub>	1ppm
XDS-7BH	B <sub>2</sub> H <sub>6</sub>	500ppb	XDS-7HB	HBr	10ppm	XDS-7SO	SO <sub>2</sub>	10ppm
XDS-7SE	H <sub>2</sub> Se	250ppb	XDS-7NO	NO	100ppm	XDS-7ND	NO <sub>2</sub>	10ppm

Contact us for information on gases not included in the table.

## Option : Sensor stocker model EC-7 (Up to 6 sensors)



- Use the sensor stocker to supply power to the sensor units.

## Specifications

Model	XPS-7
Detection Principle	Electrochemical cell
Gas Detected	Semiconductor manufacturing gases
Gas Sampling Method	Extractive
Detection Range	Depends on the specifications
Resolution	1/100 of full scale
Indication Accuracy	±10% of full scale
Alarm Mode	2nd stage alarm type
Alarm Indication	Intermittent buzzer, flashing lamp
Response Time	60s or less (60% response)
Operating Temperature	0 to 40°C
Power Source	4× AA alkaline dry cells (*2) or an AC adaptor
Battery Life (*2)	Up to 12 hours (by alkaline dry cells at 20°C without alarms)
Dimensions	W62×H150×D128mm (excluding protrusions)
Weight	Approx. 1.3kg
Standard accessories	Gas sampling hose with probe, shoulder strap, 4× AA alkaline dry cells, Spare filters
Optional Accessories	AC adaptor (100 VAC/6 VDC), sensor stocker, log data collection kit

\*1 Under identical measurement conditions.

\*2. Battery life may vary with ambient conditions, conditions of use, storage period, battery manufacturers, etc.



# XA-4000 Series



● Waterproof/ dustproof (equivalent to IP67)



	Model	Comb gas	O2	H2S	CO
4-gas	XA-4400	○	○	○	○
	XA-4300H	○	○	○	
3-gas	XA-4300C	○	○		○
	XA-4200KS	○	○		
2-gas	XA-4200KH	○		○	
	XA-4200KC	○			○
	XA-4200SH		○	○	
	XA-4200SC		○		○

## Specifications

Model	XA-4400			
Gas Detected	Combustible gas (methane)	Oxygen	Hydrogen sulfide	Carbon monoxide
Detection Principle	Catalytic combustion	Galvanic cell	Electrochemical cell	Electrochemical cell
Sampling Method	Diffusion			
Detection Range (Service Range)	0-100%LEL (101-110%LEL)	0-25.0vol% (25.1-50.0vol%)	0-30.0ppm (30.1-150.0ppm) *1	0-300ppm (301-2,000ppm) *2
Alarm Set Value	1st stage: 10%LEL 2nd stage: 30%LEL	1st stage: 19.5vol% 2nd stage: 18.0vol%	1st stage: 10.0ppm 2nd stage: 15.0ppm TWA: 10.0ppm STEL: 15.0ppm	1st stage: 50ppm 2nd stage: 150ppm TWA: 25ppm STEL: 300ppm
Operating Temperature	-10 to 40 degrees C, 30 - 85%RH (non condensing)			
Power Source	2 x AA alkaline dry cells			
Display	LCD display			
Alarm Mode	Buzzer, flashing red lamps, flashing LCD display, vibration			
Battery Life *3	Approx. 15 hours.(at 25 degrees C, without alarm, backlight and data logging)			
Degree of Protection	Equivalent to IP67 *4			
Functions	<ul style="list-style-type: none"> <li>Automated backlight</li> <li>Peak hold (lower limit for oxygen)</li> <li>Alarm test</li> <li>Change of alarm set value setting (unlocked)</li> <li>Self-diagnosis function</li> <li>Auto zero adjustment (Oxygen: 21vol%)</li> <li>Display remaining battery life, temperature and time</li> <li>Change alarm volume setting (unlocked)</li> <li>Data logging (optional data logger is required)</li> <li>TWA/STEL function</li> </ul>			
Dimensions	79 (W) x 89 (H) x 33 (D) mm (excluding protrusions)			
Weight	Approx. 230g (including batteries)			
Standard Accessory	2 x AA alkaline dry cells, belt clip, replacement filter element			
Options	Soft case, arm belt, neck strap, simple inspection jig, data logger, pump unit kit, 1m gas sampling hose, 8m gas sampling hose			

\*1 0.5ppm increments in from 35.0ppm to 150.0ppm.

\*2 5ppm increments in from 350ppm to 2000ppm.

\*3 It may differ by the condition of environment and use, storage period, battery manufacturer, etc.

\*4 Waterproof and dustproof structure meeting our inspection which conforms to the degree of protection IP67 in brand new condition.

## Standard Accessory

Belt clip



## Options

Soft case (C-15)



Arm belt (ST-9)



Neck strap (ST-10)



Attach to soft case.

Data logger (XA4000L)



To load stored data by infrared communication into computer.

# Multi-Gas Detectors

COSMOS Personal Gas Monitor XX-2200 Series Carbon monoxide/Oxygen detector

## XOC-2200



(Actual size)

### Features

- Can be used continuously for 5000 hours.
- Available with loud buzzer, alarm lamp from 4 dimensions, and peak hold function.
- Available with TWA (Time Weighted Average) gas concentration display, memory of peak value, and peak hold function.

### Specifications

<b>Model</b>	XOC-2200	
<b>Gas Detected</b>	Oxygen (O <sub>2</sub> )	Carbon Monoxide (CO)
<b>Detection Principle</b>	Galvanic cell	Electrochemical cell
<b>Sampling Method</b>	Diffusion	
<b>Measuring Range (Service Range)</b>	0-25vol% (25-50vol%)	0-300ppm: 1ppm, (350-2,000ppm: 50ppm)
<b>Resolution</b>	0.1vol%	0-350ppm: 1ppm 350-2,000ppm: 50ppm
<b>Indication Accuracy *1</b>	Within ±0.5vol%	Within ±30ppm
<b>Alarm Set Value</b>	1st stage: 19.5vol% 2nd stage: 18.0vol%	1st stage: 50ppm, 2nd stage: 150ppm, 150ppm·h (time weighted average)
<b>Response Time *2</b>	20s or less	30s or less
<b>Display Mode</b>	LCD (Manual backlight)	
<b>Alarm Mode</b>	Buzzer sounds, flashing red light, vibrator	
<b>Functions</b>	Remaining battery level, peak hold, peak value memory, readout of time weighted average, remaining battery level, alarm functions except gas alarm (time weighted average, sensor malfunction, battery level, zero-adjustment malfunction), gas calibration, gas concentration indication	
<b>Operating Temperature</b>	-10°C to 40°C, 30-90% RH (non-condensing)	
<b>Operating Air Pressure</b>	Air pressure: ±10%	
<b>Power source *3</b>	1 × AAA alkaline dry cell	
<b>Battery Life</b>	Up to 5,000 hours (at 20°C with less than 20ppm of CO and more than 20.3vol% of O <sub>2</sub> )	
<b>Dimensions</b>	W65 × H64 × D22mm (excluding protrusions)	
<b>Weight</b>	approx. 75g (including battery)	
<b>Standard Accessories</b>	1 × AAA alkaline dry cell, 1 × safety pin adaptor (with fixing screw)	

\*1 Under identical measuring conditions.

\*2 Operating at 20 ± 2°C.

\*3 Battery life may vary with ambient conditions, conditions of use, storage period, battery manufactures, etc.

COSMOS Personal Gas Monitor XX-2200 Series Hydrogen Sulfide/Oxygen detector

## XOS-2200



(Actual size)

### Features

- Can be used continuously for 5000 hours.
- Available with loud buzzer, alarm lamp from 4 dimensions, peak hold function.
- Thin, lightweight design.

### Specifications

<b>Model</b>	XOS-2200	
<b>Gas Detected</b>	Oxygen (O <sub>2</sub> )	Hydrogen Sulfide (H <sub>2</sub> S)
<b>Detection Principle</b>	Galvanic cell	Electrochemical cell
<b>Sampling Method</b>	Diffusion	
<b>Detection Range (Service Range)</b>	0-25vol% (25-50vol%)	0-30.0ppm (30.1-100ppm)
<b>Resolution</b>	0.1vol%	0-35.0ppm: 0.1ppm 35-100ppm: 5ppm
<b>Indication Accuracy *1</b>	Within ±0.5vol% ±1 digit	Within ±1.5ppm ±1 digit
<b>Alarm Set Value</b>	1st stage: 19.5vol% 2nd stage: 18.0vol%	10.0ppm 15.0ppm
<b>Response Time *2</b>	20s or less	30s or less
<b>Display Mode</b>	LCD (Manual backlight)	
<b>Alarm Mode</b>	Buzzer sounds, flashing red light, vibrator	
<b>Functions</b>	Remaining battery level, peak hold, memory of peak value, alarm functions except gas alarm (sensor malfunction, remaining battery level, air-adjustment malfunction), gas concentration indication.	
<b>Operations Temperature</b>	-10°C to 40°C, 30-85% RH (non-condensing)	
<b>Operation Air Pressure</b>	Air pressure ±10%	
<b>Power Source</b>	1 × AAA alkaline dry cell (LR03)	
<b>Battery Life *3</b>	Up to 5000 hours (at 20°C without alarm)	
<b>Dimensions</b>	W65 × H64 × D22mm (excluding protrusions)	
<b>Weight</b>	Approx. 75g (including battery)	
<b>Standard Accessories</b>	1 × AAA alkaline dry cell, 1 × safety pin adaptor (with fixing screw)	

\*1 Under identical measuring conditions. \*2 Assuming 90% response and operating at 20 ± 2°C.

\*3 Battery life may vary with ambient conditions, conditions of use, storage period, battery manufactures, etc.

Portable odor level indicator

## XP-329ⅢR



### Features

- Instant digital display of odor intensity.

### Applications

- Performance check on deodorizing apparatus and air cleaners.
- Measuring smells of factory exhaust, waste water, and drainage.
- Quality control of foods and spices.

### Specifications

Model	XP-329ⅢR
Substance Measured	Various odors, odor components
Detection Principle	Indium oxide-based sensitivity hot wire semiconductor sensor
Sampling Method	Extractive *Extractive flow: 400±150ml/min
Display	LCD digital indication (64 × 128 dots matrix) (measurement value, measurement mode, operating conditions, remaining battery level, data memory, bar indication for sensor output and communication channel etc.)
Measurement Mode	Monitoring mode · Batch mode
Detection Range	Level indication: 0-2000 (In case of zero-based setting at the 2nd dot from the left in the sensor output bar graph)
Repeatability	Measurement value ± 5% ± 1 digit *1 level indication
Response Time	20s or less (90% response) by calibrated odor
External Output	Analog output: Level indication: 0000-2000 corresponding to DC0-200 mV. (0.1mV as contrasted with indication 1) (Except approx. 204.8mV in case of OVER LEVEL) Digital input/output: RS-232C output the indicated value (ASCII Code) (Except in case of OVER LEVEL, output [****])
External Output Terminal	DIN connector for both analog output and digital input/output
Operating Temperature and Humidity	Temperature: 0 to 40°C Humidity: 10-80%RH (non-condensing)
Dimensions	W84 × H275 × D40mm (excluding protrusions)
Weight	Approx. 640g (including batteries)
Power Source	4 × AA alkaline dry cells or AC adaptor
Battery Life	Up to 8 hours by alkaline cells, low battery alarm function
Standard Accessories	Activated carbon filter, Drain filter, Sample draw attachment, Tube intake, AC adaptor, Carrying case, Output connector, Communication pack (CD), 4 × AA alkaline dry cells, Teflon tube (1m), 2 × Activated carbons, 2 × Filter elements (10 pcs.), Instruction manual, Test report

\*1 Under identical measuring conditions.

# Flue Gas Detectors

Digital oxygen indicator for combustion control

## XP-3180E



### Features

- Suitable for measuring concentration of oxygen in the flue gas of boilers etc.

### Specifications

Model	XP-3180E
Gas Detected	Oxygen in the flue gas
Detection Principle	Galvanic cell
Sampling method	Extractive
Detection Range	0-25.0vol%
Indication Accuracy (Under identical conditions)	±0.3vol% (Compliant with JIS 8201)
Alarm Set Value	18.0vol%
Display	LCD digital (with back light) Digital display Digital bar display
Alarm Indication	Gas alarm; Intermittent buzzer, Red lamp flashing Trouble alarm; Buzzer, Red lamp flashing, LCD display
Explosion-Proof Structure	Exib II BT3
Operating Temperature	0 to 40°C
Power Source	4 × AA alkaline dry cells
Battery Life *1	Up to 100 hours
Dimensions	W82 × H162 × D36mm
Weight	Approx. 450g
Standard Accessories	Soft case, 4 × AA alkaline dry cells, Gas sampling hose(1m), Probe with cooling drain filter
Optional Accessories	2-10m gas sampling hose, Curled probe, Data download software (CD-ROM software and USB cable)

\*1 Battery life may vary with ambient conditions, conditions of use, storage period, battery manufactures, etc.



(Designation required)

# Indoor Air Pollutant Detectors

Portable and simplified Formaldehyde detector

## FORMTECTOR XP-308B



### Features

- No need to replace reagents for each measurement.
- Select either mg/m<sup>3</sup> or ppm as the displayed measurement mode for the measurement time.
- Select either the 30-min or 10-min measurement mode for the measurement time.
- Fully automatic operation simply by pushing operation buttons at the site of measurement.
- Random access to measurement data after measurement (up to 32 values).
- Reduced influence of VOCs through the use of DNPH filter.

### Applications

- Indoor air control.
- Housing material control.
- Checking remodeling byproducts.

### Specifications

Model	XP-308B
Substance Detected	Formaldehyde
Detection Principle	Electrochemical cell (Influence of VOCs reduced by DNPH filter.)
Detection Range	0.01 to 0.38mg/m <sup>3</sup> (Service range: 0.39 to 3.00mg/m <sup>3</sup> ) 0.01 to 0.30ppm (Service range: 0.31 to 3.00ppm)
Sampling Method	Extractive
Measurement Time	30min/10min measurement mode (selectable)
Power Source	6× C dry cells or AC adaptor (9VDC)
Battery Life *1	30-min measurement mode : Up to 50 measurement operations by manganese dry cells(10-min measurement mode : Up to 100 measurement operations by manganese dry cells)
Filter Life *2	30-min measurement mode : 50 measurement operations (10-min measurement mode : 100 measurement operations)
Operating Temperature	5 to 40°C
Display	Digital numbers, Message, Bar graph
Dimensions	W175 × H140 × D86mm
Weight	Approx. 2.5kg
Standard Accessories	3 × DNPH Filters, 6× C manganese dry cells, Soft case, Sampling tube, Ten filter elements, Tweezers
Optional Accessories	AC adaptor, External output cable, Data reception software

\*1 Battery life may vary with storage conditions, conditions of use, storage period, battery manufacturers, etc.

\*2 These values are for an average formaldehyde concentration per measurement of 0.10mg/m<sup>3</sup>. The battery life will be shortened at higher concentrations.

### Considerations for Use

- Measured value can be influenced if aldehyde group other than formaldehyde, like acetaldehyde, coexists.
- Cigarette smoke or alcohol like liquor will cause measurement errors.
- Sudden change in environment, such as temperature and humidity, will cause measurement errors.

## Others

HCFC/HFC detector

## XP-704



### Features

- Newly developed low-power hot wire semiconductor sensor for HCFCs and HFCs realized super-sensitive detection.
- Compact, lightweight, and easy to use! Furthermore, it's Extractive type.
- Detection indicated in two ways - lamp and buzzer.
- Far more sensitive than leak detection liquid (soapy water etc.), and easier to use.

### Specifications

Model	XP-704
Detection Principle	Hot wire semiconductor
Gas Detected	R-22, R-123, R-23, R-32, R-134a, R-142b, R-404A, R-407A, R-407C, R-407E, R-410A, R-507A, R-290, R-600a, R-707 * Please specify gas to be detected.
Sampling Method	Extractive
Minimum Detectable Concentration	5ppm
Minimum Detectable Leak Rate	2.1×10 <sup>-6</sup> Pa · m <sup>3</sup> /s 2.8g/year leak
Response Time	10s or less
Detection Indication	Intermittent buzzer and flashing lamp
Power Source	4 × AA (R6) dry cells
Battery Life *1	Up to 3 hours (by manganese dry cells) Up to 9 hours (by alkaline dry cells)
Low Battery	BATT. Lamp goes off
Operating Temperature	0 to 40°C
Dimensions	W68 × H155 × D32mm
Weight	Approx. 400g
Standard Accessories	Probe with filter/moisture trap, Check gas, Filter element, Soft case, 4 × AA (R6) manganese dry cells, Spare filters
Optional Accessories	Earphone

\*1 Battery life may vary with ambient conditions, conditions of use, storage period, battery manufacturers, etc.

# SDM-72



## Features

- Enables diagnosis of the wear condition of bearings before an increase in vibration.
- Simple operation - simply place the grease sample.

## Applications

- Simple diagnosis and trend monitoring of the wear condition of greased bearings, gears, etc.
- Pre-diagnosis for Ferrography method and SOAP method.

## Specifications

Model	SDM-72
Measurement Principle	Magnetic balance type electromagnetic method
Substance Measured	Steel dust concentration in grease
Measurement Range	0 - 5.000%wt
Resolution	0.001%wt
Zero Adjustment	Automatic adjustment
Amount of Sample	Approx. 0.8ml
Power Source	4 x AA (R6) alkaline dry cells
Battery Life *1	Up to 30 hours by alkaline cells
Operating Temperature	0 to 40°C
Dimensions	W84 x H190 x D40mm
Weight	Approx. 500g (including batteries)
Standard Accessories	Carrying case, Grease sampling spatula, Grease sample case (10 pieces), 4 x AA (R6) alkaline dry cells

\*1 Battery life may vary with ambient conditions, conditions of use, storage period, battery manufacturers, etc.

# SDM-73



## Features

- Enables simple diagnosis and trend monitoring of the wear condition of bearings, gears, cylinders, etc. by checking steel dust concentration in lubricating oil.
- Simple operation - simply place the oil sample.

## Applications

- Simple diagnosis of the wear condition of bearings, gears, cylinders, etc. in rotational equipment.
- Monitoring steel dust contamination in hydraulic oil and grinding oil.

## Specifications

Model	SDM-73
Measurement Principle	Magnetic balance type electromagnetic induction method
Substance Measured	Steel dust concentration in lubricating oil
Measurement Range	0-19999wt ppm
Resolution	1wt ppm
Zero Adjustment	Automatic adjustment
Amount of Sample	1.5ml
Power Source	4 x AA (R6) alkaline dry cells
Battery Life *1	Up to 30 hours by alkaline cells
Operating Temperature	0 to 40°C
Dimensions	W84 x H190 x D40mm
Weight	Approx. 500g (including batteries)
Standard Accessories	Carrying case, 2ml syringe (5 pieces), Oil sampling nozzle (2 pieces), Syringe holder, 4 x AA (R6) alkaline dry cells

\*1 Battery life may vary with ambient conditions, conditions of use, storage period, battery manufacturers, etc.

We are ISO 9001 certified for our design, manufacturing, sales, and service operations at our head office, branches and factories.



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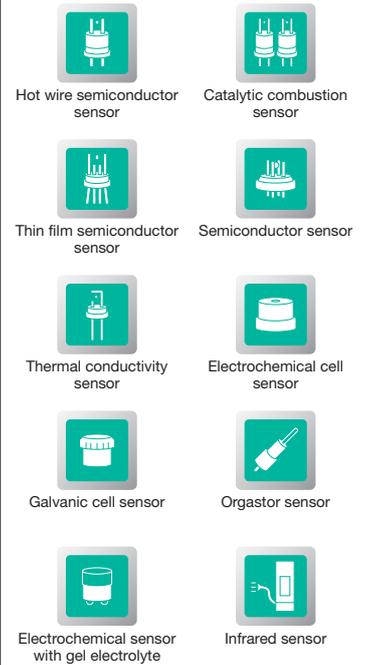
We obtained the ISO 14001 International Environmental Management System certification at head office.



### Type of Gas Detected



### Detection Principle



#### Safety warning

- Read the operating instructions thoroughly before use. Always operate in accordance with the instructions.
- Be sure to choose the sensor designed to detect the required type of gas. Use of the wrong sensor type could cause an accident.

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\* The information contained in this catalog is subject to change.

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