COSMOS

PORTABLE GAS DETECTORS
PRODUCT GUIDE

COMBUSTIBLE GAS **DETECTORS**

PORTABLE GAS DETECTOR **XP-3110**

Combustible gas

Catalytic combustion sensor

XP-3110-☐

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

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

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℃
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)

ATEX CCOE   CE ⟨Ex⟩ IC   Type approved by Class NK (NK)
No.06T605 (Designation required)

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

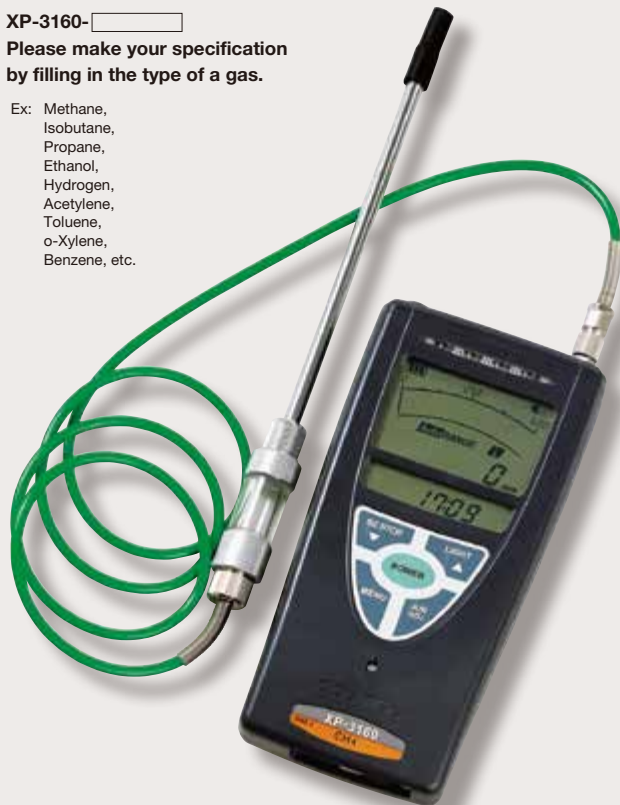## COMBUSTIBLE GAS DETECTOR **XP-3160**

Combustible gas

Catalytic combustion sensor

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.

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℃
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).

ATEX CCOE   CE ⟨Ex⟩ IC   Type approved by Class NK (NK)
No.06T605 (Designation required)

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

COMBUSTIBLE GAS DETECTOR **XP-3140**

Combustible gas　　Others　　Thermal conductivity sensor

XP-3140- ☐
**Please make your specification
by filling in the type of a gas.**

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

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: ±5% / L range: ±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℃
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).

ATEX CCOE　UL　CE　Ex　KC　| Type approved by Class NK (NK) No.06T605 (Designation required)

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

MULTI-GAS DETECTOR **XP-3118**

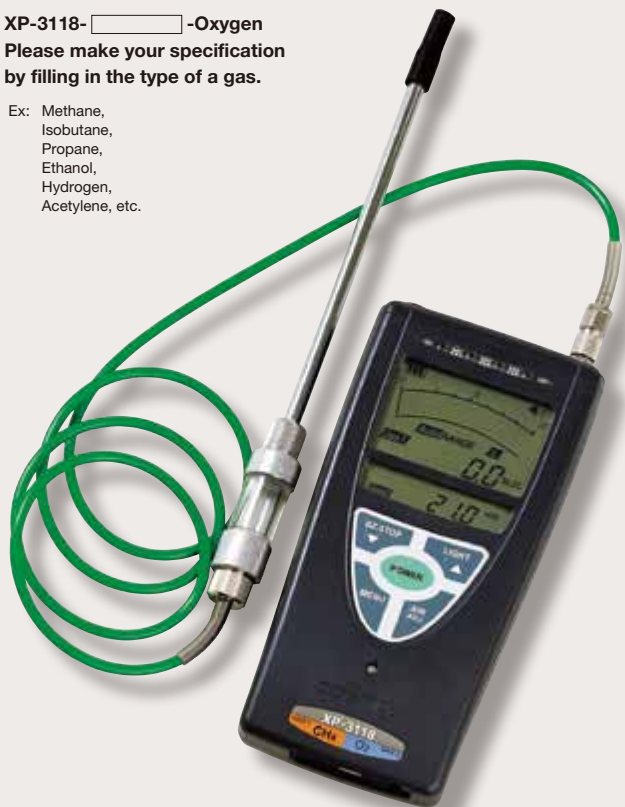Combustible gas　　O₂ Oxygen　　Catalytic combustion sensor　　Galvanic cell sensor

XP-3118- ☐ **-Oxygen**
**Please make your specification
by filling in the type of a gas.**

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

FEATURES

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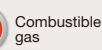- Powerful built-in pump allows sample-draws up to 30 meters.

SPECIFICATIONS

Model	XP-3118	
Gas Detected	Combustible gases and vapors (specify gas to be detected)	Oxygen
Detection Principle	Catalytic combustion	Galvanic cell
Sampling Method	Extractive	
Detection Range	0-100%LEL	0-25.0vol%
Indication Accuracy (Under identical conditions)	±5% of full scale value	±0.3vol%
Alarm Set Value	20%LEL	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	Exibd II CT3	
Operation Temperature	0 to 40℃	
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).	

ATEX CCOE　UL　CE　Ex　KC　| Type approved by Class NK (NK) No.06T605 (Designation required)

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

COMBUSTIBLE GAS **DETECTORS**

GAS LEAK DETECTOR **XP-702III**

CFC | Combustible gas | Hot wire semiconductor sensor

FEATURES
- Smaller and Lighter
- Easy-to-See LCD Display
- Two Alarm Lamps
- Trace Gas can be Detected
- Capable of Detecting 2-Gas

SPECIFICATIONS

Model	XP-702III-A	XP-702III-B	XP-702III-F
Target Gas	2 combustible gas (switchable)	1 combustible gas	CFC & Combustible (switchable)
Detection Principle	Hot-wire semiconductor		
Detectable Leak Rate	Town gas, LPG, etc.: 3.3 × 10-6Pa.m3/s CFCs: [R407C] 12.4g/year [R410A] 11.2g/year		
Detectable Concentration	10 ppm (CFCs: 30ppm)		
Response Time	Within 3 seconds (except for CFCs)		
Power Source	2 × Size AA alkaline battery (LR6)		
Battery Life	Approx. 12 hours (with size AA alkaline batteries at 25 degrees C)		
Explosion-proof Structure	Ex ia II BT3 (intrinsically safety)		
Operating Temperature/Humidity	−20 to 50 degrees C, less than 85% RH (non condensing)		
Dimensions	Approx. 38 (W) × 130 (H) × 32 (D) mm (excluding protrusions)		
Weight	Approx. 190g (including batteries and soft case)		
Standard Accessories	Soft case, Drain filter, Filter element, Gas probe, Dust filter, Hand strap, 2 × AA alkaline batteries, Instruction Manual		
Optional Accessories	Annealed copper tube, Gas collector, Sampling hose, etc.		

USAGE EXAMPLES

Inspection for leaks from gas pipes

Indoor piping, gas outlets, rubber tubes
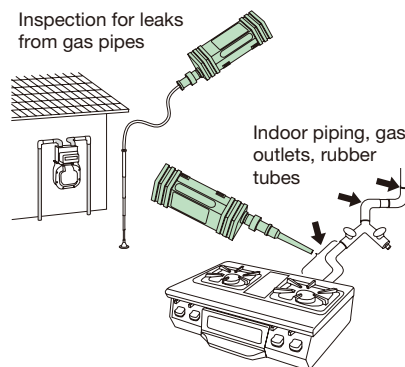
Pipe joints
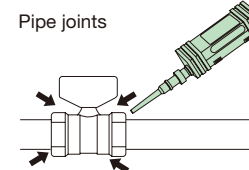
Air conditioners
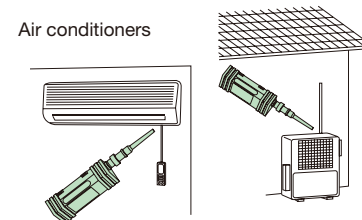
CART TYPE GAS DETECTOR **XP-707II**
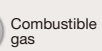
Combustible gas | Hot wire semiconductor sensor

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 level.

SPECIFICATIONS

Model	XP-707II
Gas Detected	Natural gas (CH$_4$ 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)
Alarm Indication	(Gas detection) 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℃
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 manufactures, etc.

Compact storage

PORTABLE VOC ANALYZER **XG-100V**

PC is not included.

FEATURES

■ **High sensitivity**
・Low concentrations of the target gas can be analyzed and measured with high accuracy.

■ **Field measurement**
・Easily transportable to use on site.
・No need of carrier gas.

■ **Simple operation**
・Simply inject the target gas into a gas inlet with a syringe or Auto Sampler Option.

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.
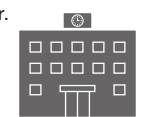• Development of deodorization equipment.

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: $4\mu g/m^3$, 1ppb Maximum detection limit: $3700\mu g/m^3$, 1000ppb
Repeatability	Within ±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 (pending for 24 VDC)
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

PERSONAL OXYGEN INDICATOR **XO-2200**

O₂ Oxygen   Galvanic cell sensor

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

(Actual size)

CE

SPECIFICATIONS

Model	XO-2200
Gas Detected	Oxygen (O2)
Detection Principle	Galvanic cell
Sampling Method	Diffusion
Detection Range	0-25vol%
(Service Range)	(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℃ to 40℃, 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℃ 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℃
*3 Battery life may vary with ambient conditions, conditions of use, storage period, battery manufactures, etc.

OXYGEN INDICATOR **XP-3180**

O₂ Oxygen   Galvanic cell sensor

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 (Under identical conditions)	±0.3vol%
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℃
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).

ATEX CCOE CLASSIFIED UL CE Ex IC Type approved by Class NK (NK) No.06T606 (Designation required)

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

DIGITAL OXYGEN INDICATOR **XO-326IIs**

O₂ Oxygen

Galvanic cell sensor

5m Cable:
XO-326IIsA
XO-326IIsA-V
(Vibration)

1m Spiral Cable:
XO-326IIsB
XO-326IIsB-V
(Vibration)

10m Cable:
XO-326IIsC
XO-326IIsC-V
(Vibration)

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

FEATURES

- Continuously for up to 15,000 hours with 2 × AA alkaline batteries
- Automatic Air Adjustment
- Plug-in sensor installed

SPECIFICATIONS

Model	XO-326IIsA XO-326IIsA-V	XO-326IIsB XO-326IIsB-V	XO-326IIsC XO-326IIsC-V
Cable Length	5m	1m (spiral cable)	10m
Target Gas	Oxygen		
Detection Principle	Galvanic cell		
Sampling Method	Diffusion Type		
Detection Range	0 to 25.0 vol%		
(Service Range)	(25.1 to 40.0%)		
Indication Accuracy	Within +/−0.5vol%		
Display Resolution	0.1 vol%		
Alarm Set Value	1st stage: 19.5 vol% 2nd stage: 18.0 vol%		
Response Time	Within 20 seconds		
Alarm Function	Buzzer sounds, Red lamp blinks, LCD display blinks (latching), Vibration (for vibration specifications)		
Power Source	2 × size AA alkaline battery (LR6/ made by PANASONIC)		
Continuous Use	Approx. 15,000 hours		
Explosion-proof Structure	Ex ia II CT3 X (Japan)		
Protection Class	IP20 or equivalent		
Operating Temperature/	−10 to 40 degrees C		
Humidity	30 to 85% RH (non condensing)		
Dimensions (mm) (excluding protrusions)	66(W) × 170(H) × 29(D)	66(W) × 120(H) × 29(D)	66(W) × 200(H) × 29(D)
Weight	Approx. 340g	Approx. 265g	Approx. 410g

TOXIC GAS DETECTORS

PERSONAL CO DETECTOR XC-2200

Toxic gas | Electrochemical cell sensor

FEATURES
- Can be used continuously for 5,000 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.

(Actual size)

CE

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℃ to 40℃, 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℃ 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℃.
*3 Battery life may vary with ambient conditions, conditions of use, storage period, battery manufactures, etc.

PERSONAL H2S DETECTOR XS-2200

Toxic gas | Electrochemical cell sensor

FEATURES
- Can be used continuously for 5,000 hours.
- Available with loud buzzer, alarm lamp from 4 dimensions, peak hold function.
- Thin, lightweight design.

(Actual size)

CE

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℃ to 40℃, 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℃ 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℃.
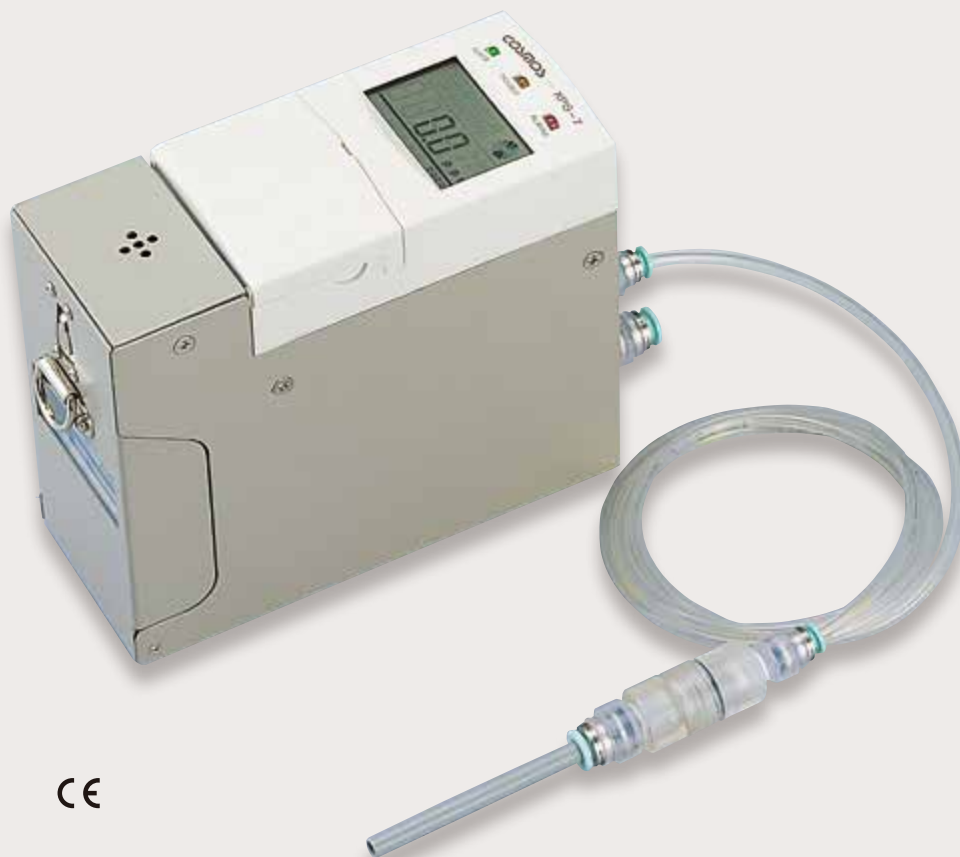*3 Battery life may vary with ambient conditions, conditions of use, storage period, battery manufactures, etc.

SEMICONDUCTOR GAS DETECTOR **XPS-7**

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.

Option :XPS-7 & Sensor Units

XPS-7

(Sensor units)

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

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

FEATURES

■ A single XPS-7 can be used for a variety of semiconductor gases, simply by changing the sensor unit.

■ Cassette-type sensor units eliminate calibration.

List of Detected Gases

Type	Gas	Full Scale	Type	Gas	Full Scale	Type	Gas	Full Scale
XDS-7NH	NH_3	100ppm	XDS-7GH	GeH_4	1ppm	XDS-7HS	H_2S	50ppm
XDS-7SH	SiH_4	25ppm	XDS-7CL	Cl_2	5ppm	XDS-7CO	CO	250ppm
XDS-7DC	SiH_2Cl_2	25ppm	XDS-7CF	ClF_3	1ppm	XDS-7DS	Si_2H_6	25ppm
XDS-7AH	AsH_3	250ppb	XDS-7HC	HCl	25ppm	XDS-7F2	F_2	5ppm
XDS-7PH	PH_3	1ppm	XDS-7HF	HF	10ppm	XDS-7OZ	O_3	1ppm
XDS-7BH	B_2H_6	500ppb	XDS-7HB	HBr	10ppm	XDS-7SO	SO_2	10ppm
XDS-7SE	H_2Se	250ppb	XDS-7NO	NO	100ppm	XDS-7ND	NO_2	10ppm

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

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℃
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℃ 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 (100-240 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.

COMBUSTIBLE GAS DETECTOR

GAS LEAK DETECTOR XP-703DIII

Toxic gas | Hot wire semiconductor sensor

FEATURES
- Can detect trace amounts of various semiconductor manufacturing gases.
- Automatic stop pump function
- Automatic gas exhaust mode
- Equivalent to IP22 (in soft case)

SPECIFICATIONS

Model	XP-703D III
Target Gas	H_2, AsH_3, B_2H_6, SiH_4, PH_3
Detection Principle	Hot-wire semiconductor sensor
Sampling Method	Extractive type
Detectable Leak Rate	H_2: 5.07×10^{-7}, AsH_3: 2.53×10^{-7}, B_2H_6: 1.01×10^{-7}, SiH_4: 2.53×10^{-7}, PH_3: 1.52×10^{-7}
Detectable Gas Concentration	H_2: 1.0ppm, AsH_3: 0.5ppm, B_2H_6: 0.2ppm, SiH_4: 0.5ppm, PH_3: 0.3ppm
Response Time	Within 10 seconds (for 300% of detectable gas concentration)
Power Supply	Size AA alkaline batteries × 2
Battery Life *1	Approx. 12 hours (with size AA alkaline batteries)
Degree of Protection	Equivalent to IP22
Operating Pressure	Atmospheric pressure (800 to 1100 hPa)
Operating Temperature and Humidity	0 to 40 degrees C Less than 85% RH (with no condensation)
Dimensions	Approx. 38 (W) × 130 (H) × 32 (D) mm (excluding protrusions)
Weight	Approx. 190g (including batteries and soft case)
Accessories	Soft case, Drain Filter, Replacement Filter, Gas Probe, Dust Filter, Hand Strap, Size AA Alkaline Battery × 2, etc.,

*1 It may vary based on the environmental conditions, operating conditions, storage time, battery manufacturer, etc.

CE

MULTI-GAS DETECTORS

MULTI-GAS DETECTOR XP-302M

Combustible gas | Oxygen | Toxic gas | Catalytic combustion sensor | Galvanic cell sensor | Electrochemical cell sensor

FEATURES
- Compact and Lightweight.
- Large, blight display with automated backlight.
- Monitors LEL, O_2, CO and H_2S

SPECIFICATIONS

Model	XP-302M			
Gases Detected	Combustible Gas (Methane or LPG)	Oxygen	Hydrogen Sulfide	Carbon Monoxide
Detection Principle	Catalytic combustion	Galvanic cell	Electrochemical cell	Electrochemical cell
Gas Sampling Method	Extractive			
Measuring Range (Service range)	0-100%LEL	0-25.0vol% (25.1-50.0vol%)	0-30.0ppm (30.1-150ppm)	0-150ppm (151-300ppm)
Indication Accuracy (Repeatability)*1	< ±5%LEL	< ±0.5vol%	< ±1.5ppm	< ±10ppm to 100ppm
				< ±15ppm to 150ppm
Alarm Set Value	1st stage	10%LEL	19.5vol%	10.0ppm	50ppm
	2nd stage	30%LEL	18.0vol%	15.0ppm	100ppm
Response Time*2	with a 1m sampling hose	< 25 sec.	< 20 sec.	< 30 sec.	< 30 sec.
	with an 8m sampling hose	< 40 sec.			
Operating Temperature & Humidity	−10 to 40℃, 95% RH (non-condensing)			
Power Source	4 × AA alkaline dry cells			
Display	A large LCD with backlight provides simultaneous and continuous readout of all gases being monitored. 3 user-selectable display modes (standard display / graphic display / English display).			
Alarms	90＋ dB buzzer, flashing LCD and warning lamp			
Battery Life*3	8＋ hours on 4 × AA alkaline cells (20℃, no alarm, no backlight and datalogging OFF)			
Safety Design	Intrinsically safe design Exibd II BT3			
Functions	・Automatic backlight (in dim light or alarm condition) ・Zero adjustment ・Peak hold ・Buzzer control ・Low flow alarm ・Datalogging function (up to 150 hours) ・Buzzer stop ・Alarm test ・Display of remaining battery level, current time and temperature			
Demensions	Approx. W152 × H152 × D42 mm			
Weight	Approx. 870g			
Standard Accessories	XP-302M-□-1◆	1m sampling hose (Probe with filter/moisture trap, Spare filters) Soft case		
	XP-302M-□-2◆	8m sampling hose (with float), Soft case and carrying case		
	XP-302M-□-3◆	Aluminum case*4, 8m sampling hose (with float), An external alarm (with 8m cable) and AC adaptor		
	XP-302M-□-4◆	Aluminum case*4, 8m sampling hose with hose reel (with float), An external alarm with a cable reel (with 8m cable) and AC adaptor		
Optional Accessories*5	・Log data download software (for Windows 2000 or XP) ・20m sampling hose for float ・30m sampling hose for float			

＊1 Under identical conditions ＊2 T90 ＊3 It depends on the environmental conditions, service conditions, storage period, and battery manufacturers ＊4 Non explosion-proof type ＊5 Please contact our dealers / distributors for available accessories

◆ Ordering information

Model   Specification code
XP-302M-□-□
Choose one from A – C   Choose one from 1 – 4

A	4 gases (Combustible, Oxygen, Hydrogen sulfide, Carbon monoxide)
B	3 gases (Combustible, Oxygen, Hydrogen sulfide)
C	3 gases (Combustible, Oxygen, Carbon monoxide)

※Combustible : Methane or LPG

MULTI-GAS DETECTOR **XA-4000II SERIES**

Combustible gas | Oxygen | Toxic gas | Catalytic combustion sensor | Galvanic cell sensor | Electrochemical cell sensor

Infrared Port

Alarm

Battery

AIR ADJ.

Power Button

Buzzer

Gas detection port

ATEX CCOE UL CE Ex
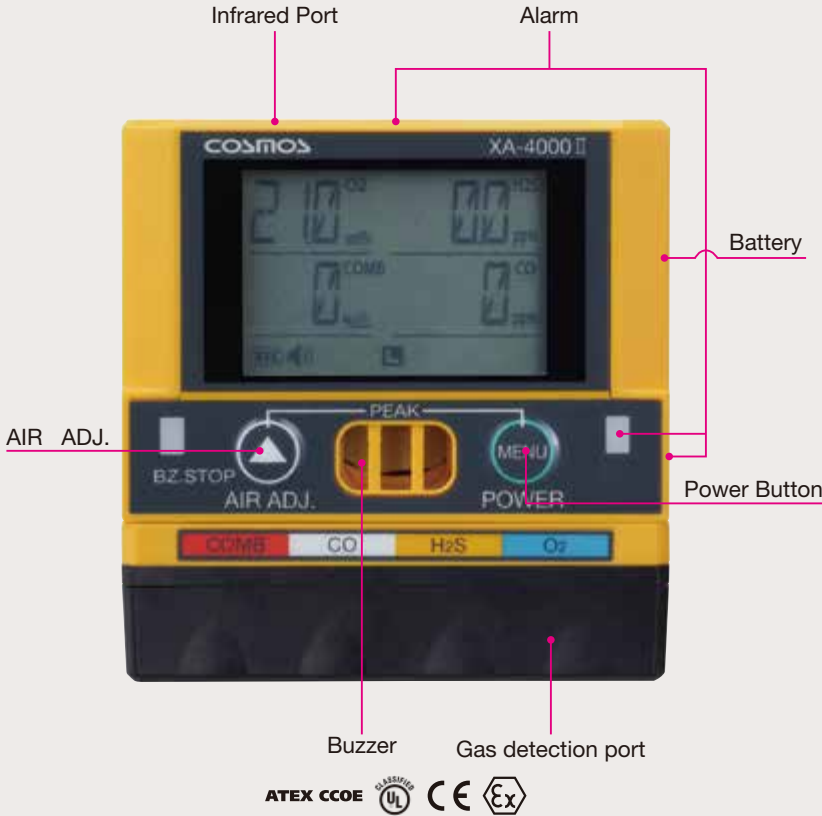
Water and Dust Proof (IP67)

Specify Target Gas

	Model	LEL	O2	H2S	CO
4-gas	XA-4400II	✓	✓	✓	✓
3-gas	XA-4300IIKHS	✓	✓	✓	
	XA-4300IIKCS	✓	✓		✓
2-gas	XA-4200IIKS	✓	✓		
	XA-4200IIKH	✓		✓	
	XA-4200IIKC	✓			✓
	XA-4200IIHS		✓	✓	
	XA-4200IICS		✓		✓

SPECIFICATIONS

Model	XA-4400II			
Target Gas	Combustible gas (methane or Isobutane)	Oxygen	Hydrogen sulfide	Carbon monoxide
Detection Principle	Catalytic combustion	Galvanic cell	Electrochemical cell	Electrochemical cell
Sampling Method	Diffusion			
Detection Range	0 - 100%LEL	0 - 25.0vol%	0-30.0ppm	0-300ppm
Display Solution	1%LEL	0.1vol%	0-35ppm: 0.1ppm 35-150ppm: 0.5ppm	0-350ppm: 1ppm 350-2000ppm: 5ppm
Alarm Set Value	1st alarm: 10%LEL 2nd alarm: 30%LEL	1st alarm: 19.5vol% 2nd alarm: 18.0vol%	1st alarm: 10.0ppm 2nd alarm: 15.0ppm TWA: 10.0ppm STEL: 15.0ppm	1st alarm: 50ppm 2nd alarm: 150ppm TWA: 25ppm STEL: 300ppm
Operating Temperature/Humidity	-20 to 50 degrees C, 30 to 85%RH (non condensing)			
Continuous Use Time	Approx. 40 hours when the long-life mode is ON / Approx. 20 hours when the long-life mode is OFF Approx. 1200 hours without combustible gas sensor (at 25 degrees C, without alarm, backlight OFF)			
Power Source	BP-4000 II AL Battery Unit : 1 x Panasonic (or DURACELL or ENERGIZER or VARTA) alkaline battery (LR03/AAA) BP-4000 II MH Battery Unit : 1 x GP GP75AAAHC			
Display	LCD			
Gas Alarm	Buzzer sound, Flashing RED lamp, Vibration, LCD (automatic recovery)			
Explosion-proof structure	Class I, Zone 0 AEx ia IIC T3 Ga Class I, Division 1 Groups A,B, C, D (UL)			
Intrinsically Safe	Ex ia IIC T3, ATEX / Class I, Groups A, B, C and D; Class I, Zone 0, AEx ia IIC T3, UL			
Ingress Protection	IP67			
Functions	Self-diagnosis (sensor trouble), Automatic air adjustment, Remaining battery level, Peak-hold, LCD backlight, Buzzer stop for gas alarm, Time & Temperature indication, Alarm test, Buzzer volume, Silent mode, Long-life mode, Data logging (datalogger kit is necessary for logging)			
Dimensions	70 (W) x 73 (H) x 26 (D) mm (excluding protrusions)			
Weight	Approx. 130g (excluding battery)			
Accessories	Safety pin band, alkaline battery, 2 x filter element for replacement			
Options	Datalogger kit, soft case, belt clip ※Bump tester is under development			

ACCESSORY	OPTIONS					
Alligator clip	Soft case	Recharger set	Neck Strap	Arm Belt	Datalogger Kit	Pump Unit
	C-23	BC-9	ST-15	ST-11	XA-4000IIL	PA-4000II

MULTI-GAS DETECTORS

PERSONAL CO/O2 DETECTOR **XOC-2200**

Toxic gas · Electrochemical cell sensor

FEATURES

- Uses continuously for 5,000 hours.
- 3 types of Alarms: loud buzzer, alarm lamp and vibration.
- Available with TWA (Time Weighted Average) concentration display, peak memory, and peak hold function.

(Actual size)

CE

SPECIFICATIONS

Model	XOC-2200	
Gas Detected	Oxygen (O$_2$)	Carbon Monoxide (CO)
Detection Principle	Galvanic cell	Electrochemical cell
Sampling Method	Diffusion	
Measuring Range (Service Range)	0-25vol% (25-50vol%)	0-300ppm
Resolution	0.1vol%	0-300ppm: 1ppm 301-2,000ppm: 50ppm
Indication Accuracy *1	Within±0.5vol%	Within±30ppm
Alarm Set Value	1st stage: 19.5vol% 2nd stage: 18.0vol%	1st stage: 50ppm, 2nd stage: 150ppm, 150ppm · h (time weighted average)
Response Time *2	20s or less	30s or less
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, remaining battery level, alarm functions except gas alarm (time weighted average, sensor malfunction, battery level, zero-adjustment malfunction), gas calibration, gas concentration indication	
Operating Temperature	−10℃ to 40℃, 30-90% RH (non-condensing)	
Operating Air Pressure	Air pressure±10%	
Power source *3	1 × AAA alkaline dry cell	
Battery Life	Up to 5,000 hours (at 20℃ with less than 20ppm of CO and more than 20.3vol% of O$_2$)	
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℃.
*3 Battery life may vary with ambient conditions, conditions of use, storage period, battery manufactures, etc.

PERSONAL H2S/O2 DETECTOR **XOS-2200**

Toxic gas · Electrochemical cell sensor

FEATURES

- Uses continuously for 5,000 hours.
- 3 types of Alarms: loud buzzer, alarm lamp and vibration.
- Thin, lightweight design.

(Actual size)

CE

SPECIFICATIONS

Model	XOS-2200	
Gas Detected	Oxygen (O$_2$)	Hydrogen Sulfide (H$_2$S)
Detection Principle	Galvanic cell	Electrochemical cell
Sampling Method	Diffusion	
Detection Range (Service Range)	0-25vol% (25-50vol%)	0-30.0ppm (30.1-100ppm)
Resolution	0.1vol%	0-35.0ppm: 0.1ppm 35-100ppm: 5ppm
Indication Accuracy *1	Within ±0.5vol% ±1 digit	Within ±1.5ppm ±1 digit
Alarm Set Value　1st stage	19.5vol%	10.0ppm
2nd stage	18.0vol%	15.0ppm
Response Time *2	20s or less	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), gas concentration indication.	
Operations Temperature	−10℃ to 40℃, 30-85% RH (non-condensing)	
Operation Air Pressure	Air pressure ±10%	
Power Source	1 × AAA alkaline dry cell (LR03)	
Battery Life *3	Up to 5000 hours (at 20℃ 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 idential measuring conditions.　*2 Assuming 90% response and operating at 20 ±2℃.
*3 Battery life may vary with ambient conditions, conditions of use, storage period, battery manufactures, etc.

ODOR LEVEL INDICATOR **XP-329 III R**

Odor | Hot wire semiconductor sensor

FEATURES

■ Simple measurement of odor level.

APPLICATIONS

■ Performance check of air purifier and deodorization equipment.
■ Odor measurement of factory exhausts.
■ Quality control of foods and spices.

SPECIFICATIONS

Model	XP-329 III R
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.

REAL-TIME VOC MONITOR **XP-3120-V**

VOC | Hot wire semiconductor sensor

FEATURES

■ Compact and light-weight
■ Easy to use
■ Intrinsically safe: Ex ib d IIB T3 (TIIS)
■ Stable measurement with a long-term proven sensor

SPECIFICATIONS

Model	XP-3120-V
Gas Detected	VOC (calibration gas: Toluene)
Sampling method	Extractive
Detection Principle	Hot wire semiconductor
Detection Range	Low range: 0 to 100 ppm High range: 0 to 1000 ppm
Indication Accuracy *1	±10% of full scale
Display	Main LCD: Digital-LCD with backlight Sub LCD: Clock display
Alarm	Non-Alarm
Explosion-Proof Structure	Ex ib d IIB T3 (TIIS)
Operating Temperature	0 to +40°C
Power Source	4 × AA alkaline dry battery
Continuous Operation *2	With alkaline battery: approx. 25 hours (at 20°C, backlight OFF)
Dimensions	W82 × H162 × D36mm
Weight	Approx.450g (excluding batteries)
Standard Accessories	Soft case, 4 × AA alkaline dry battery, Gas sampling hose (1m, for solvent model SH-401), Replacement filter, Probe with filter/moisture trap
Optional Items	Datalogger kit (CD-ROM + USB cable), AC adaptror, Activated carbon filter set

*1 Repeatability under the same condition.
*2 It may vary depending on environment and usage conditions, storage period battery, etc.

INDOOR AIR POLLUTANT **DETECTOR**

FORMALDEHYDE DETECTOR **XP-308B**

Indoor air pollutant

Electrochemical cell sensor

FEATURES

- No need to replace reagents for each measurement.
- Possible to change mg/m³ and ppm as measurement unit.
- Possible to change 10 min, 30 min and 60 min as measurement time.
- Fully automatic operation simply by pushing operation buttons.
- Max. 32 cases of measuring result can be memorized.
- Reduced influence of VOCs with DNPH filter.

APPLICATIONS

- Indoor air control.
- Housing material control.
- Furniture and woodworking.

CONSIDERATIONS FOR USE

Readings display rather high when large amount of aldehydes exist excepting.
Avoid smoke of tabacco and alcohols when measuring.
Sudden enviroment changes such as temperature and humidity during measurement cause detection errors.

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/m³ (Service range: 0.39 to 3.00mg/m³) 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℃
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/m³. The battery life will be shortened at higher concentrations.

OTHERS

HCFC/HFC DETECTOR **XP-704III**

CFC

Hot wire semiconductor sensor

FEATURES

- Most of refrigerant gases can be detected
- Automatic stop pump function
- Automatic gas exhaust mode
- Equivalent to IP22 (in soft case)

SPECIFICATIONS

Model	XP-704 III
Target Gas	R-22, R-32, R-404A, R-407C, R-600a, R-410A, R-134a, R-290, HFO-1234yf
Detection Principle	Hot-wire semiconductor sensor
Sampling Method	Extractive type
Detectable Leak Rate (annual)	R-22: 2.84[g], R-32: 1.71[g], R-404A: 3.30[g], R-407C: 3.12[g], R-600a: 1.91[g] R-410A: 2.82[g], R-134a: 20.09[g], R-290: 1.45[g], HFO-1234yf: 3.74[g]
Detectable Gas Concentration	5 ppm (R-134a: 30ppm)
Response Time	Within 10 seconds
Power Supply	Size AA alkaline batteries × 2
Battery Life *1	Approx. 12 hours (with size AA alkaline batteries)
Degree of Protection	Equivalent to IP22
Operating Pressure	Atmospheric pressure (800 to 1100 hPa)
Operating Temperature and Humidity	0 to 40 degrees C Less than 85% RH (with no condensation)
Dimensions	Approx. 38 (W) × 130 (H) × 32 (D) mm (excluding protrusions)
Weight	Approx. 190g (including batteries and soft case)
Accessories	Soft case, Drain Filter, Replacement Filter, Gas Probe, Dust Filter, Hand Strap, Size AA Alkaline Battery × 2, etc.,

*1 It may vary based on the environmental conditions, operating conditions, storage time, battery manufacturer, etc.

CE

GREASE STEEL DUST METER SDM-72

Steel dust concentration
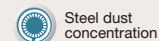
FEATURES
- Enable the wear condition of bearings to be simply determined before vibration increases.
- Simple operation - simply measured by a grease sample.

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
Applicable to	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 × AA (R6) alkaline dry cells
Battery Life *1	Up to 30 hours by alkaline cells
Operating Temperature	0 to 40℃
Dimensions	W84 × H190 × D40mm
Weight	Approx. 500g (including batteris)
Standard Accessories	Carrying case, Grease sampling spatula, Grease sample case (10 pieces), 4 × AA (R6) alkaline dry cells

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

OIL STEEL DUST CHECKER SDM-73

Steel dust concentration

FEATURES
- Enable the wear condtion of bearings to be simply determined before vibration increases.
- Simple operation - simply measured by an 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
Applicable to	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 × AA (R6) alkaline dry cells
Battery Life *1	Up to 30 hours by alkaline cells
Operating Temperature	0 to 40℃
Dimensions	W84 × H190 × D40mm
Weight	Approx. 500g (including batteries)
Standard Accessories	Carrying case, 2ml syringe (5 pieces), Oil sampling nozzle (2 pieces), Syringe holder, 4 × AA (R6) alkaline dry cells

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

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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.