



Gas Detection For Life

RKI Instruments, Inc.

Specialty Instruments



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World Leader In Gas Detection & Sensor Technology
www.rkiinstruments.com

Specialty Portable Instruments

GH-202F Leak Detector

<u>Part#</u>	<u>Description</u>	<u>Suggested Retail</u>
72-0065RK	GH-202F portable leak tester for Methane (CH4) & LPG	550.00

Replacement Parts & Accessories

60-5007RK	Sensing element, replacement, GH-202F	140.00
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SP-205 Series Leak Detector

<u>Part#</u>	<u>Description</u>	<u>Suggested Retail</u>
72-0066RK	SP-205ASC portable leak checker for Phosphine (PH3) (Also detects Arsine, Diborane, Silane, & Hydrogen)	650.00

Replacement Parts & Accessories

33-1110RK	Filter tube only, RP-5, SP-205	5.50
33-1116RK	Filter body (no tube) RP-5, SP-205	15.75
33-5000RK	Filter paper disc only, replacement, packet of 5 each, SP-205	18.00
62-0160A	Sensor replacement for SP-205A, SH-8619	175.00
62-0160ALF	Sensor replacement for SP-205ALF, SH-8622	175.00
62-0160ASC	Sensor replacement for SP-205ASC, SH-8621	175.00



SP-208 Combustible Leak Detector With Bar Graph

<u>Part#</u>	<u>Description</u>	<u>Suggested Retail</u>
72-0071RK	Model SP-208, hand held Methane / combustible gas leak checker with alkaline batteries and flexible probe. Includes bar graph readout and internal vibrator for noisy areas (for natural gas)	650.00
72-0072RK	Model SP-208L, hand held Propane / combustible gas leak checker with alkaline batteries and flexible probe. Includes bar graph readout and internal vibrator for noisy areas (for Propane).	650.00



FP-30 and FP-40 Formaldehyde

<u>Part#</u>	<u>Description</u>	<u>Suggested Retail</u>
73-1060RK	Model FP-30 (15 & 30 minute averages) Formaldehyde	995.00
73-1061RK	Model FP-40 (3 minute averages) Formaldehyde	1,095.00

Replacement Parts & Accessories

65-TAB-008	Detection tablets for FP-30/-40, box of 20, (1 test each) Formaldehyde (use for -008,-009,-010)	75.00
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Specialty Portable Instruments

RI-413A Infrared Halocarbon Monitor

<u>Part#</u>	<u>Description</u>	<u>Suggested Retail</u>
73-0569RK	RI-413, freon monitor (R-11,-12, -22, -134A,-113, -114, -502) 3,300.00



Instrument Price Includes

20-0293RK	Black vinyl carrying case for RI-411/RI-413A
49-1140RK	Size D alkaline battery
49-2046RK	Continuous operation adaptor, 115 VAC, RI-411/RI-413
80-0012RK	Hose, 3' coiled, polyurethane, RI-411/RI-413A/GP-226
80-0153RK	Probe assembly for RI-411/RI-413A

Calibration Kits

<u>Instrument #</u>	<u>Cal-Kit Part #</u>	<u>Cal-Kit Description</u>	<u>Price</u>
73-0569RK	81-RI413R12	Cal kit, RI-413, 17L cyl 2,000 ppm R-12/Air, disp valve, gas bag, screwdriver, case & tubing	155.00

For a complete listing of calibration kits for the RI-413A, see the Portable Calibration Kits section on page 110.

Replacement Parts & Accessories

20-0293RK	Black vinyl carrying case for RI-411/RI-413A	90.00
30-0012RK	Pump assembly for RI-411A / RI-413A	64.00
47-1540RK	Recorder output cable for RI-411A / RI-413A	20.00
49-1140RK	Size D alkaline battery	2.00
49-1240RK	Battery, Ni-Cad, D size	12.00
49-2046RK	Continuous operation adaptor, 115 VAC, RI-411/RI-413	80.00
49-2145RK	Charger, RI-411 / RI-413, 115VAC (old style, 2001 & before)	125.00
49-2146RK	Charger, RI-411 / RI-413, 115VAC (new style, one rounded end on plug & socket)	125.00
61-5005ARK	Detector assembly for RI-413A, single beam	1,500.00
80-0012RK	Hose, 3' coiled, polyurethane, RI-411/RI-413A/GP-226	40.00
80-0153RK	Probe assembly for RI-411/RI-413A	45.00
80-0213RK	Water trap, bowl type, for GX-7/GP-226/RI-411/RI-413A	75.00
80-0225RK	Hydrophobic filter, in line, ACR0 - 50 with fittings for GX-7/-2001/-2003 and RX-415	60.00

RI-85 Hand Held Infrared CO2 Monitor

<u>Part#</u>	<u>Description</u>	<u>Suggested Retail</u>
73-0570RK	Model RI-85, hand held IR CO2 monitor, 0 - 10,000 ppm, sample draw with internal pump. Includes alkaline batteries, coiled hose, probe, and vinyl cover 1,250.00
73-0570RK-05	Model RI-85, hand held IR CO2 monitor, 0 - 5%, sample draw with internal pump. Includes alkaline batteries, coiled hose, probe, and vinyl cover 1,250.00



Calibration Kits

<u>Instrument #</u>	<u>Cal-Kit Part #</u>	<u>Cal-Kit Description</u>	<u>Price</u>
73-0570RK	81-RI85	Cal kit, RI-85, 34L cyl 5, 000 ppm CO2/N2, 34L cyl 100% N2, disp valve, gas bag, case & tubing	180.00
73-0570RK-05	81-RI85-05	Cal kit, RI-85, 34L cyl 2.5% CO2/N2, 34L cyl 100% N2, disp valve, gas bag, case & tubing	180.00

Specialty Portable Instruments

GP-226 and OX-226 Replacement Parts & Accessories

20-0253RK	Vinyl case for GP-226	38.00
2681-2002-00	Buzzer for GP-226	7.00
2905-04-4320	Battery Pack, GP-226 (new type, universal)	175.00
30-0014RK	Pump assembly for GP-226	185.00
49-2013RK	Charger for GP-226, 100/115 VAC	135.00
49-2014RK	Charger for GP-226, 220 VAC	135.00
57-GP226	PC board assembly, GP-226	400.00
65-0607RK	Sensor, Oxygen (O ₂), (OS-B7) for OX-226/OX-227/GX-7	180.00
80-0009RK-10	Hose, 10', polyurethane, GX-82/-94/-2001/-2003	36.00
80-0012RK	Hose, 3' coiled, polyurethane, RI-411/RI-413A/GP-226	40.00
80-0150RK	Probe assembly, 10", with cotton ball filter	25.00
80-0213RK	Water trap, bowl type, for GX-7/GP-226/RI-411/RI-413A	75.00
GE-4641-S2	LEL Sensor for GP-226, isobutane (HC)	175.00
GE-5740-B5	LEL sensor for GP-226, methane (CH ₄)	220.00

RI-415 Series IR Combustible Monitors, 0 - 100% LEL / Volume

<u>Part#</u>	<u>Description</u>	<u>Suggested Retail</u>
73-0580RK	RI-415, Methane, land version	1,895.00
73-0581RK	RI-415, Isobutane, land version	1,895.00
73-0582RK	RI-415, Methane, marine version (with accessories)	2,925.00
73-0583RK	RI-415, Isobutane, marine version (with accessories)	2,925.00



Calibration Kits

Instrument #	Cal-Kit Part #	Cal-Kit Description	Price
73-0580RK 73-0582RK	81-RI415CH4	Cal kit, RI-415, 34L cyl 50% LEL CH ₄ /Air, 34L cyl 50% vol CH ₄ /Air, disp valve, gas bag, two gas bags, case & tubing	225.00
73-0581RK 73-0583RK	81-RI415HC	Cal kit, RI-415, 34L cyl 50% LEL isobutane/Air, 34L cyl 10% vol isobutane/N ₂ , disp valve, two gas bags, case & tubing	225.00

RX-415 Series Dual Gas IR For LEL/Volume HC & Oxygen

<u>Part#</u>	<u>Description</u>	<u>Suggested Retail</u>
73-0590RK	RX-415, 0-100% LEL/0-100% vol HC & 0-25% O ₂ , land version (isobutane calibration)	2,200.00
73-0590RK-ATEX	RX-415, 0-100% LEL/0-100% vol HC & 0-25% O ₂ , land version (isobutane calibration) with ATEX / BASEEFA approval	2,400.00
73-0591RK	RX-415, 0-100% LEL & 0-100% vol CH ₄ , & 0-25% O ₂ , land version (CH ₄ calibration)	2,200.00
73-0591RK-ATEX	RX-415, 0-100% LEL & 0-100% vol CH ₄ , & 0-25% O ₂ , land version (CH ₄ calibration) with ATEX / BASEEFA approval	2,400.00



Calibration Kits

Instrument #	Cal-Kit Part #	Cal-Kit Description	Price
73-0580RK 73-0582RK	81-RX415CH4	Cal kit, RX-415, 34L cyl 50% LEL CH ₄ /Air, 34L cyl 50% vol CH ₄ /Air, 34L cyl 100% N ₂ , disp valve, 3 gas bags, case & tubing	295.00
73-0581RK 73-0583RK	81-RX415HC	Cal kit, RX-415, 34L cyl 50% LEL isobutane/Air, 34L cyl 10% vol isobutane/Air, 34L cyl 100% N ₂ , disp valve, three gas bags, case & tubing	295.00

Specialty Portable Instruments

RX-515, RX-516, & RX-517 Multigas IR Monitors

Part#	Description	Suggested Retail
73-0610RK	RX-515, 0-100% LEL / 0-100% vol HC / 0-25% O2 / 0-100 ppm CO / 0-20% CO2	3,495.00
73-0611RK	RX-516, 0-100% LEL / 0-100% vol HC / 0-25% O2 / 0-100 ppm H2S	3,195.00
73-0612RK	RX-517, 0-100% LEL / 0-100% vol HC / 0-100 ppm H2S / 0-1,000 ppm H2S	3,495.00



Replacement Parts & Accessories For RI-415, RX-415, RX-515, RX-516, & RX-517

30-0017RK	Pump assembly for RI-415	360.00
30-0019RK	Pump assembly for RX-415	360.00
33-0160RK	Dust filter, internal, plastic, GX-4000	2.00
49-1130RK	Battery, C size, alkaline battery	1.75
61-5006RK	Sensor, IR, Methane (CH4), RI/RX-415, model DE-3113-4	1,200.00
61-5007RK	Sensor, IR, Hydrocarbons (HC), RI/RX-415, model DE-3123-1	1,200.00
65-0601RK	Sensor, Oxygen (O2) (OS-B3)	140.00
80-0009RK-99	Hose, 100', polyurethane, RKI style	75.00
80-0011RK	Hose, 30 meter, quick disconnect, RI-415 marine version, Riken style (orange)	200.00
80-0012RK	Hose, 3' coiled, polyurethane, RI-411/RI-413A/GP-226	40.00
80-0150RK	Probe assembly, 10", with cotton ball filter	25.00
80-0213RK	Water trap, bowl type, for GX-7/GP-226/RI-411/RI-413A	75.00
80-0225RK	Hydrophobic filter, in line, ACR0 - 50 with fittings for GX-7/-2001/-2003 and RX-415	60.00
81-0018RK-01	Cylinder, isobutane 50% LEL in Air, 34L	52.00
81-0019RK-01	Cylinder, isobutane 10% volume in N2, 34L	52.00
81-0078RK-01	Cylinder, N2 100%, 34L	52.00
81-1131RK	Gas bag, Green, LEL range, for RI/RX-415	40.00
81-1132RK	Gas bag, Orange, Volume range, for RI/RX-415	40.00

NP-237H Combustible Detector

Part#	Description	Suggested Retail
72-0122RK	Model NP-237H portable, general use version, isobutane calibration	2,250.00
72-0123RK	Model NP-237H portable, marine use version with accessories, isobutane calibration	3,150.00



Replacement Parts & Accessories

30-0007RK	Pump assembly for NP-237H (old style), RP-DH8A	375.00
30-0008RK	Pump assembly, for GX-4000A, NP-237H, GX-7, RP-D9H, complete.....	265.00
30-0304RK	Pump valves only (new style), for SC-7 / GX-4000 / NP-237H	4.00
30-0305RK	Pump diaphragm only (new style), for SC-7 / GX-4000	16.00
30-0307RK	Valve plate for 30-0308RK pump	7.50
80-0009RK-10	Hose, 10', polyurethane, GX-82/-94/-2001/-2003	36.00
80-0012RK	Hose, 3' coiled, polyurethane, RI-411/RI-413A/GP-226	40.00
80-0150RK	Probe assembly, 10", with cotton ball filter	25.00
81-0018RK-01	Cylinder, isobutane 50% LEL in Air, 34L	52.00
81-0019RK-01	Cylinder, isobutane 10% volume in N2, 34L	52.00
81-1131RK	Gas bag, Green, LEL range, for RI/RX-415	40.00
81-1132RK	Gas bag, Orange, Volume range, for RI/RX-415	40.00

Replacement Sensors

62-0135RK	Sensor, LEL for NP-237H (GE-4641-S6-M), methane, propane, HC	250.00
62-0136RK	Sensor, % volume TC for NP-237H, TE-4148-S6, methane, propane, HC	250.00

Calibration Kits

Instrument #	Cal-Kit Part #	Cal-Kit Description	Price
72-0122/3RK	81-NP237H	Cal kit, NP-237H, 34L cyl 50% LEL isobutane/Air, 34L cyl 10% isobutane/N2, disp valve, gas bag, screwdriver, case & tubing	180.00

Fixed Systems Detector Assemblies

M - Series Low Cost Transmitter

ORDERING INFORMATION: The M-Series pricing includes the plastic enclosure and sensor.

<u>Part#</u>	<u>Description</u>	<u>Suggested Retail</u>
65-2424RK	Hydrogen Sulfide (H2S) sensor / transmitter in plastic enclosure (not explosion proof)	295.00
65-2434RK	Carbon Monoxide (CO) sensor / transmitter in plastic enclosure (not explosion proof)	295.00



Replacement Sensors Only

ES-1531-CO	Sensor, Carbon Monoxide (CO) 0 - 300 ppm, plug-in type, CT-7 style	175.00
ES-1537-H2S	Sensor, Hydrogen Sulfide (H2S) 0 - 100 ppm, plug-in type, CT-7 style	175.00

PS 2 Single Point Stand Alone Monitor

ORDERING INFORMATION: The PS 2 is provided as standard with the sensor on a 30' cable. Both 24VDC powered or 115 VAC powered versions are available, and the 115 VAC version is supplied with a 6' power cord.

(Specify gas & alarm points when ordering)

(Consult factory for PPM applications before ordering/quoting)

<u>Part#</u>	<u>Description</u>	<u>Suggested Retail</u>
73-1020RK-01	PS 2 for LEL detection, 24 VDC powered	425.00
73-1020RK-02	PS 2 for PPM detection, 24 VDC powered	425.00
73-1021RK-01	PS 2 for LEL detection, 115 VAC powered	435.00
73-1021RK-02	PS 2 for PPM detection, 115 VAC powered	435.00
73-1022RK-01	PS 2 for LEL detection, 48 VDC powered	495.00



Replacement Sensors Only

62-0010RK	Sensor assembly for PS 2, LEL, with 30' cable	100.00
62-0011RK	Sensor assembly for PS 2, PPM, with 30' cable	100.00

RI-257 FC, HCFC, HFC & IPA Infrared Monitor

ORDERING INFORMATION: The RI-257 is a fixed monitor / transmitter for detection of many different refrigerants and for IPA. Please specify exactly which refrigerant or compound you intend to use it for when placing an order. It is currently available for FC-14, FC-116, FC-C318 (FC = Perfluoro compound gas), R - 23, R - 32, R - 41, R - 134a, Vertrel XP, R - 225, and IPA.

<u>Part#</u>	<u>Description</u>	<u>Suggested Retail</u>
RI-257-XXX	Model RI-257 stand alone monitor (specify gas)	4,300.00



RI-215 Series IR CO2 Monitors

<u>Part#</u>	<u>Description</u>	<u>Suggested Retail</u>
RI-215A	Model RI-215A IR diffusion detector head for CO2, 0 - 2000 ppm, (0-10,000 ppm optional)	850.00
RI-215D	Model RI215D IR sample draw detector head for CO2, 0 - 2000 ppm, (0-10,000 ppm optional)	1,895.00



OX-500 & CO-500 Indoor Stand Alone Monitors

<u>Part#</u>	<u>Description</u>	<u>Suggested Retail</u>
72-1002RK	Model OX-500 controller and detector for Oxygen (OX), 0 - 25%	795.00
73-1200RK	Model CO-500 controller and detector for Carbon Monoxide (CO), 0 - 150 ppm.....	895.00



Fixed Systems Detector Assemblies

Paper Tape Monitors



ORDERING INFORMATION: When ordering a Paper Tape system please specify the following:

- 1) Paper tape machine (specify gas and range)
- 2) Replacement tape (specify gas and range)
- 3) Consult factory before selecting any paper tape monitor

<u>Part#</u>	<u>Description</u>	<u>Suggested Retail</u>
FP-250FLW	Model FP-250FLW paper tape machine for formaldehyde	5,295.00

Replacement Parts

65-FT-111	Tape FT-111 for formaldehyde	170.00
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<u>Part#</u>	<u>Description</u>	<u>Suggested Retail</u>
FP-260AGZS	Model FP-260AGZS paper tape machine for C4F6 / C5F8	7,950.00
FP-260K	Model FP-260K paper tape machine	4,595.00

Replacement Parts

65-FV-017	Tape FV-017 for Hexafluorobutadiene C4F6 & C5F8.....	120.00
65-FVL-001	Tape FVL-001 for Cupra Select, Arsine AsH3, Phosphine PH3, Disilane SiH6, Hydrogen Sulfide H2S, Hydrogen Selenide H2Se	75.00
65-FVL-002	Tape FVL-002 for Silane SiH4, Diborane B2H6, Dimethylaluminum Hydride DMAH (C2H7AL), Cupra select	75.00
65-FVL-004	Tape FVL-004 for Hydrogen Chloride HCl	75.00
65-FVL-006	Tape FVL-006 for Hexafluoroathetylene Acetone Hhfac (CF3COCH2COCF3)	75.00
65-FVL-015	Tape FVL-015 for Ruthenium tetraoxide RuO4, Chlorine Cl2	75.00
65-FVL-108	Tape FVL-108 for Phosgene COCl2	75.00

<u>Part#</u>	<u>Description</u>	<u>Suggested Retail</u>
FP-270	Model FP-270 Paper Tape Machine	6,000.00

Replacement Parts

65-FT-004	Tape FT-004 for Hydrogen Chloride HCl (0 - 1000 ppb), FP-250A	160.00
65-FT-005	Tape FT-005 for Hydrogen Chloride HCl, HBr (0-5 ppm), FP-250A	160.00
65-FT-009	Tape FT-009 for Ammonia NH3 (0-1 ppm), TMA (C3H9N), FP-250A	160.00
65-FT-010	Tape FT-010 for Ammonia NH3 (0-6ppm), Hydrazine N2H4, FP-250A	160.00
81-0900RK	Gas check card for FP-250 & FP-270 series only	15.00

<u>Part#</u>	<u>Description</u>	<u>Suggested Retail</u>
FP-300	Model FP-300 paper tape machine	4,500.00

Replacement Parts

65-FC-010	Tape FC-010 for Ammonia NH3, FP-300	160.00
65-FCL-001	Tape FCL-001 for Arsine AsH3 / Phosphine PH3, FP-300	160.00
65-FCL-002	Tape FCL-002 for Silane SiH4, FP-300.....	160.00
65-FCL-015	Tape FCL-015 for Chlorine Cl2, FP-300	160.00



Model GH-202F

Features

- Level meter and buzzer sound easy to watch
- Automatic balance circuit against background level
- Automatic suction
- Intrinsically safe in Japan

Specifications

Detection principle	Semiconductor method
Detectable gas	LPG, city gas, methyl bromide, freon, methyl bromide ammonia etc.
Minimum detectability	High range : 20 ppm (in case of freon 30 ppm) Low range : 200 ppm
Sampling method	Fan sampling
Operating temp.	-5°C ~ +40°C
Batteries & operating hrs	Dry battery × 6 pcs, 4 hrs min by Alkaline battery
Dimensions & weight	50(W) × 270(H) × 60(D) mm, Approx 450 grs

RIKEN

GAS LEAK TESTER

**SPEEDY
DETECTION
FOR A SMALL
LEAK!**



MODEL SP-205A

MODEL **SP-205A**

■LPG, LNG and TOWN GAS

MODEL **SP-205ALF**

■FLON and LPG

MODEL **SP-205ASC**

■SEMI-CONDUCTOR PROCESSING GAS

- Phosphine
- Arsine
- Hydrogen
- Diborane
- Silane

FEATURES

- Lightweight, compact, easy to use
- LED lamp flash, intermittent buzzer for a warning
- Intrinsically safe design
- Lamp goes off for low battery voltage
- Sample draw system
- Fast response and high sensitivity



RIKEN KEIKI CO.,LTD.



DESCRIPTION

Riken portable gas leak tester model SP-205A is a standard type high-sensitive beeper which effectively monitors a small leak of wide various gases such as LPG, LNG and town gas etc. Riken also provides you with specially designed SP-205A for LPG and town gas, SP-205ALF for Flon and LPG, and SP-205ASC for semi-conductor processing gases.

The truly portable and personal leak tester model SP-205A/205ALF/205ASC can be conveniently over the shoulder with its carrying strap. These units automatically draw leaking gases with each internal pump. When an optional earphone is used, alarm buzzer sound can be heard in spite of a hard back-ground noise. With model SP-205A/205ALF/205ASC, workers can now be individually protected from potentially dangerous toxic gas leaks. These units are also used as leak checkers at pipe, pump connections. It can give an early warning indication of small leaks before they become large and potentially dangerous.

An intermittent tone sounds and a LED lamp flashes if a gas leak is detected. The tone frequency is proportional to the gas concentration, i.e., low gas concentration is signalled by a slow beep and higher gas concentration by a faster beep.

PORTABLE GAS LEAK TESTER MODEL SP-205A/SP-205ALF



SPECIFICATIONS

Model	SP-205A	SP-205ALF
Detection Principle	Catalytic/semiconductor combination. Sample-drawing with special built-in diaphragm pump	
Gases detected	LPG, LNG, Town gases	Flon, LPG
Detectable leak amounts	$3.3 \times 10^{-5} \text{ atm} \cdot \text{cc/sec}$	
Detectable concentration	10 ppm	
Response time	Within three (3) seconds	
Alarm indication	Intermittent buzzer and LED lamp	
Power source	Size "AA" Alkaline battery cells \times 4 pcs Continuous operating time approx. 7 hours at 20 °C Automatic voltage drop indication	
Explosion proof	Intrinsically safe, apply for id2G3 in Japan	
Operating temperature	- 20 °C ~ + 40 °C	
Outer dimensions	68(W) \times 155(H) \times 32(D) mm	
Weight	Approx. 400 g	

- Other applicable batteries: Carbon zinc (RSP), rechargeable Ni-Cd (KR-AA)
- Specifications subject to change without notice.

Accessories

Carrying case, Check gas, Filter unit, Filter, Batteries, taper nozzle.

Optional accessories

Earphone, Long taper nozzle, Telescopic sampling probe.

PORTABLE HYDRIDE GAS LEAK TESTER MODEL SP-205ASC

The model SP-205ASC is specially designed for the use of semiconductor industry and to detect the presence of special gas such as gaseous hydride at much higher sensitive level. Low battery alarm and gas alarm lamp are provided. After power on and turning gas selection switch to either side, find an alarm end point by turning alarm set wheel. This is ready to run. When it is necessary to have a gas concentration, turn the alarm setting wheel counterclockwise for additional graduations in clean air after the prior alarm wheel setting. Model SP-205ASC can show you an approximate gas concentration according to tables shown below.

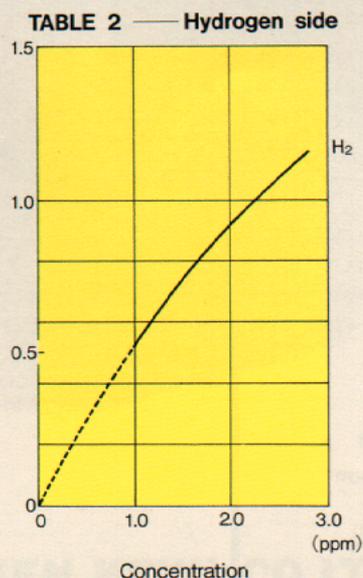
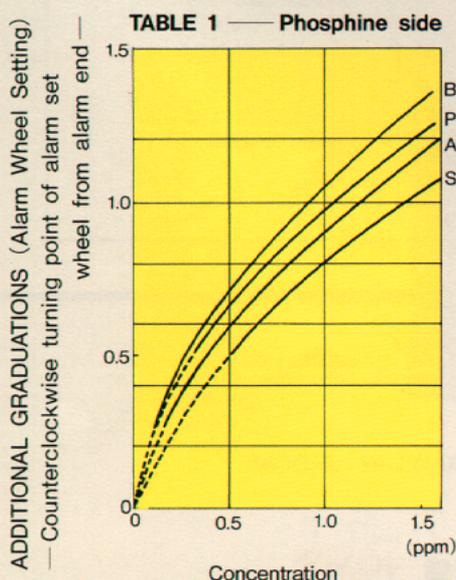
SPECIFICATIONS

Model	SP-205ASC				
Detection Principle	Catalytic/semiconductor combination. Sample-drawing with special built-in diaphragm pump				
Gases detected	Phosphine (PH ₃)	Arsine (AsH ₃)	Diborane (B ₂ H ₆)	Silane (SiH ₄)	Hydrogen (H ₂)
Detectable leak amounts (atm · cc/sec)	1.5 × 10 ⁻⁶	1.0 × 10 ⁻⁶	0.5 × 10 ⁻⁶	2.5 × 10 ⁻⁶	5.0 × 10 ⁻⁶
Detectable concentration	0.3 ppm	0.2 ppm	0.1 ppm	0.5 ppm	1.0 ppm
Response time	Within ten (10) seconds				
Alarm indication	Intermittent buzzer and LED lamp				
Power source	Size "AA" Alkaline battery cells × 4 pcs Continuous operating time approx. 7 hours at 20 °C Automatic voltage drop indication				
Operating temperature	0 °C ~ +40 °C				
Outer dimensions & Weight	68(W) × 155(H) × 32(D) mm, Approx. 400g				



- Other applicable batteries: Carbon zinc (RSP), rechargeable Ni-Cd (KR-AA)
- Specifications subject to change without notice.

Wheel Setting and Concentration of Gases (Typical value)



Accessories

Carrying case, Check gas, Filter unit, Filter, Batteries, Taper nozzle.

Optional accessories

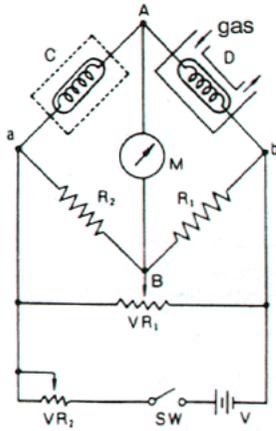
Earphone, Long taper nozzle.

DETECTION METHOD

An electrical circuit, applying the sensor shown in Fig. a, is based on a wheatstone bridge circuit as shown in Fig. b, including the detecting and compensating elements and the fixed resistors. The sensor elements are formed from sintered metal oxide semiconductors (n-type semiconductors: tin oxide, zinc oxide, etc.) on coils of fine platinum wire as shown in Fig. a. The sensor elements are heated up to several hundred degrees centigrade. As a reducing gas is chemically adsorbed on the surface of the sensor elements, the electrical conductivity of the semiconductor increases and the resultant resistance of the coil and semiconductor

combination decreases. As a result, the bridge circuit becomes unbalanced and the meter gives a deflection in proportion to the gas concentration

The surface of the metal-oxide semiconductor (M.O.S.) readily adsorbs oxygen in air. The chemisorbed oxygen dissociates into O^{2-} and O_2^- ions which thereby affect charge density in the semiconductor the electrical conductivity of the M.O.S. correspondingly decreases. However, when a reducing gas (eg. H_2) subsequently adsorbs onto the surface, onsequent interaction with chemisorbed oxygen serves to increase charge density with a proportionate increase in electrical conductivity.



- D : Gas detecting element
- C : Compensating element
- R1, R2 : Fixed resistance
- M : Meter
- VR1 : Zero adjust volume
- VR2 : Voltage adjust volume

Fig. a BASIC SENSOR CIRCUIT

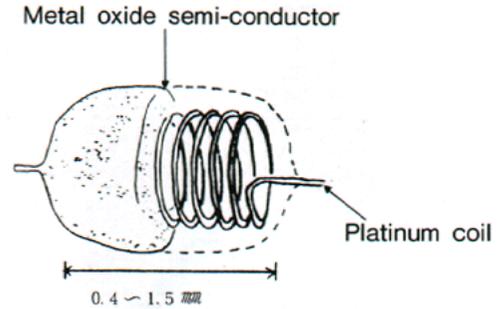
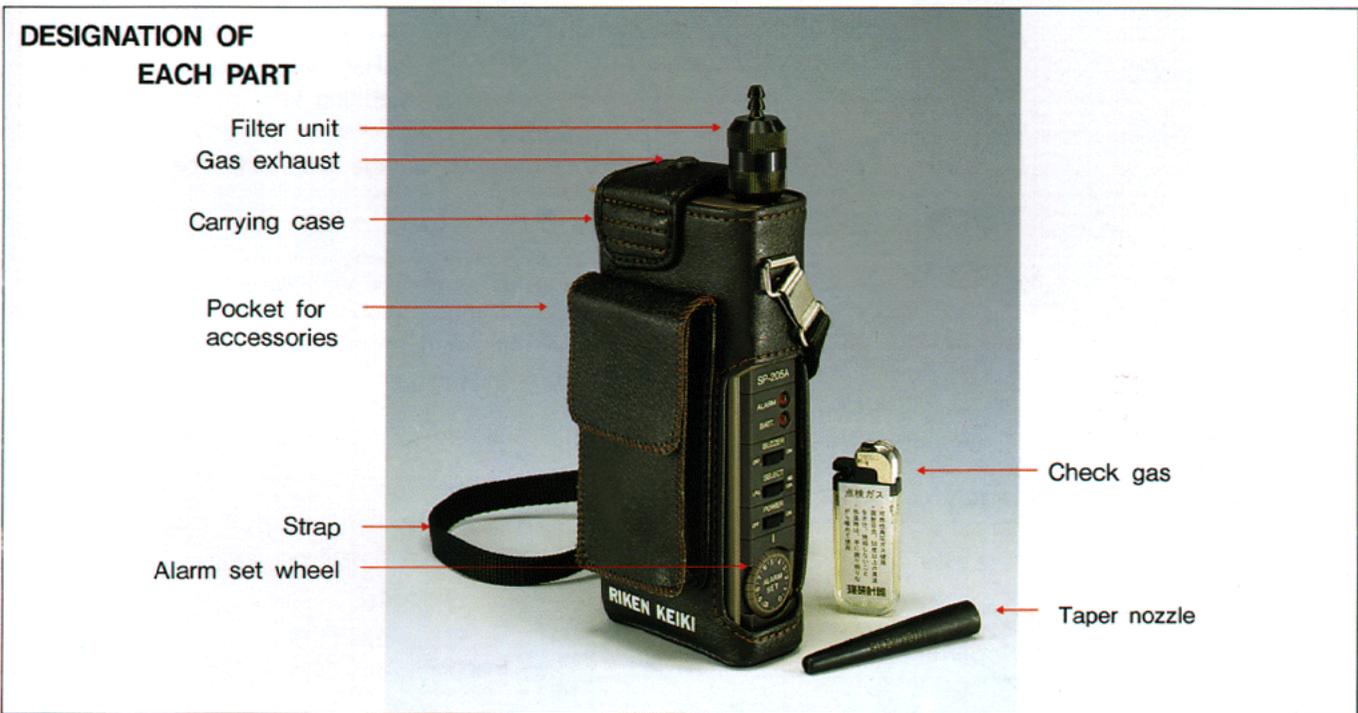


Fig. b SENSOR ELEMENT



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Model SP-208 (for Natural gas and city gas)

Model SP-208L (for LPG)



Features

- Flexible tapered nozzle applied
- Alarms with vibration, sound, light
- Easy to see LED of gas concentration
- Auto zero with no manual adjustment needed
- Easy to replace, long lasting sensor
- Flow check function ensures reliable detection

Specifications

MODEL	SP-208	SP-208L
Detection principle	Special catalytic/semiconductor combination sensor, with automatic sampling (pump drawn).	
Measuring range	10 ~ 1000 ppm	
Display	LED	
Response time	Within 3 seconds	
Alarm functions	Zero error, Low flow rate, Low battery voltage (ALL LED's blink.)	
Power requirements	AA size batteries (3 pieces)	
Continuous operation	Approx. 9 hrs with alkaline batteries	
Ambient temperature	-10 ~ +50°C	
Dimensions	Approx. 35(W)×128(H)×57(D)mm	
Weight	Approx. 320g	

Specifications subject to change without notice



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Features

- Simple operation
- Specific to Formaldehyde
- Built-in sample draw pump
- Easy to read LCD display
- Self-diagnosis
- Uses photoelectric photometry technology
- Direct digital readout
- Colorimetric detection tablet method
- No false readings from interfering gases
- Operates on 4 AA alkalines
- Stores 99 readings
- No warm up time

Applications

- Furniture and woodworking
- Coating and varnishing
- Engineered wood products
- Medical / veterinary
- Painting & corrosion resistant finishes
- Carpet manufacture & storage
- Adhesives
- Heat treatment operations
- RV/Trailer/mobil home inspecting

These highly sensitive portable gas detectors use photoelectric photometry method with colorimetric detection tab. The sample drawing rate is controlled by a microprocessor. Both the FP-30 and FP-40 have a direct readout of measurement value on an LCD display. The Model FP-30 can detect the new World Health Organization level of 0.08 ppm average for 30 minutes.

FP-30 Detection Ranges

30 minute sample 0 - 0.4 ppm (0.005 ppm/digit)

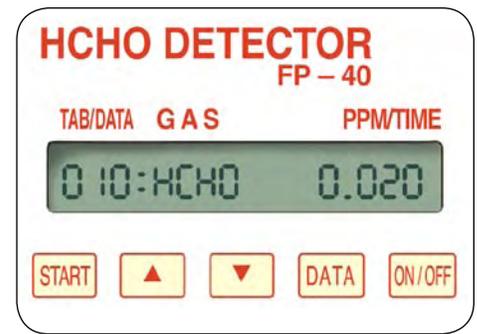
15 minute sample 0 - 1.0 ppm (0.01 ppm/digit)

FP-40 Detection Ranges

3 minute sample 0 - 0.6 ppm (0.01 ppm/digit)



Tab



LCD Display

Model FP-30 / FP-40

Model	FP-30		FP-40
Detection gas	Formaldehyde (HCHO) in air		
Detection range	0-0.4 ppm (0.005ppm/digit)	0-1.0 ppm (0.01 ppm/digit)	0-0.6 ppm
Detection time	30 minutes (1,800 sec.)	15 minutes (900 sec.)	3 minutes (180 sec.)
Detection principle	Photoelectric photometry method		
Detection method	Colorimetric tablet method (accumulating measurement)		
Accuracy	+/- 10%		
Display	Digital LCD		
Sampling method	Sample drawing with built-in pump		
Operating conditions	-10 ~ 40°C (14 ~ 104°F), below 90%RH	5 ~ 35°C (41 ~ 95°F), below 90%RH	
Memory	Detection point: Up to 99 points (automatic recording at the completion of measurement)		
Self-diagnosis	Failure of light source and light receiver, low battery voltage, pump failure, system trouble		
Power Source	AA size Alkaline batteries (quantity 4)		
Continuous Operation	Approximately 12 hours (with no alarm or backlight, with alkaline batteries at 20°C)		
Dimension	Approx 85(W) x 190(H) x 40(D)mm, 3.35(W) x 7.48(H) x 1.57(W),		
Weight	500g, 17.6 oz		
Standard Accessories	<ul style="list-style-type: none"> • Detection TAB (20 pcs/pack) ** • Carrying case • AA size alkaline batteries • Operating manual 		
Warranty	One year material and workmanship		

Interference against other gases (typical)

Test Gas	Concentration	Reading
Toluene	1.0 vol.%	0 ppm
Benzene	1.0 vol.%	0 ppm
Acetoaldehyde	100 ppm	0 ppm
Carbon monoxide	50 ppm	0 ppm
Carbon dioxide	1.0 vol.%	0 ppm
Ammonia	25 ppm	0 ppm
Acetone	1.0 vol.%	0 ppm

Field Test Verification Data

Measurement Place	FP-30	DNPH method*
Interior	0.020 ppm	0.025 ppm
Locker	0.030 ppm	0.03 ppm
Furniture	0.040 ppm	0.05 ppm

* Dinitrophenylhydrazine detection method

** Please note: Detection tabs have one year shelf life. They must be stored in a refrigerator (37°F-50°F, 3-10°C)

Note: Specifications subject to change without notice.



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Authorized Distributor:



PORTABLE HALOCARBON INDICATOR

Gas Detection For Life

RI-413A Model



Features

- Digital display
- Microprocessor controlled
- Measurement of Instantaneous concentration for 7 kinds of halogenated hydrocarbon vapors
- Measurement of average concentration over 1, 3 or 15 minutes
- Adjustable alarm point from 0-full scale
- Audible alarm
- Illuminated display
- Battery powered
- Lightweight
- Fully portable

Applications

- Cold Storage
- Cleaning Solvents
- Air Conditioning
- Shipboard use (Submarines)
- Naval Ships
- Degreasing

The Model RI-413A utilizes non-dispersive infrared absorption (NDIR) technology as a convenient and inexpensive solution to the problem of measuring for halocarbon vapors like R-11, R-12, R-22, R-113, R-114, R-502, and R-134A. By combining the versatility of a microprocessor and the selectivity of a non-dispersive infrared analyzer, RKI provides a compact and inexpensive halocarbon monitor for daily use in industrial safety and atmospheric control applications.

Each halocarbon is characterized by the amount of infrared energy the gas can absorb. Inside the Model RI-413A, a small pump continuously draws a sample of the atmosphere to be tested, through a length of hose and into an infrared chamber. The infrared ray is alternately transmitted through this chamber measuring the amount of energy passing through. As a result, the halogenated hydrocarbon vapor content is continuously monitored and digitally displayed directly in PPM units, to the nearest 25 ppm.

The microprocessor control provides easy to follow operational and malfunction instructions. Simple, reliable operation makes the RI-413A the smart choice for portable monitoring of halogenated hydrocarbon vapor levels.

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World Leader In Gas Detection & Sensor Technology
www.rkiinstruments.com

RI-413A Model

Detection Principle	Non-dispersive infrared absorption (NDIR)			
Measurable Gas & Range	R-11 (CC ₃ F) 0–4,975 ppm (25 ppm / digit)	R-113 (CCIF ₂ -CCl ₂ F) 0–3,975 ppm (25 ppm / digit)	R-12 (CC ₂ F ₂) 0–4,975 ppm (25 ppm / digit)	R-114 (CCIF ₂ -CCIF ₂) 0–2,475 ppm (25 ppm / digit)
	R-22 (CHClF ₂) 0–4,975 ppm (25 ppm / digit)	R-502 (R115+R22) 0–4,975 ppm (25 ppm / digit)	R-134a (CH ₂ FCF ₂) 0–4,975 ppm (25 ppm / digit)	
	Notes: Reading on any one of these gases can be selected with the sensor switch on the top panel. Other gases available as special versions. Consult factory.			
Indication Method	Continuous Digital LCD display instantaneous concentration Average Digital LCD display of average concentration over 1, 3, or 15 minutes			
Repeatability	Less than +/- 3% of full scale for R-12			
Response Time	Approx. 10 seconds to 90% indication			
Sampling Method	Motor-driven diaphragm pump			
Alarms	Audible for: Any user programed alarm point from 0 – full scale for any selected gas (short pulse) End of averaging period (long tone) Low battery (continuous tone)			
Ambient Temperature & Humidity	-10° C – +40°C, 10% – 95% RH (noncondensing)			
Operating Hours	Approx. 4 hours (based on use of alkaline dry cells at 25°C)			
Recorder Output	DC 0 – 100mV (linear)			
Power Supply	A) Alkaline battery, "D" size6 pcs. (Standard) B) Ni-Cd rechargeable battery6 pcs (Optional) C) 115 VAC continuous operation adapter(Optional)			
Dimensions & Weight	230(W) x 190(H) x 113(D) mm, Approx. 2.6kg (instrument only) 5 1/2 lbs.			

*Specifications subject to change without notice.

DETECTION PRINCIPLE

The infrared analyzer uses the fact that each gas absorbs infrared energy at a characteristic frequency. In the gas analyzer an infrared source (an electrically heated wire) emits a broad band of energy which is focused on a solid state detector through a narrow band filter selected to transmit only a certain range of frequencies which are selectively absorbed by halogenated vapors. A sample of the gas to be detected flows through an enclosed chamber interposed between the infrared source and the detector.

The infrared ray is alternately transmitted through this chamber. If the measuring chamber contains halogenated vapors, the amount of energy passing through the chamber is less than it would be without the halogenated vapors present. A comparison of the two levels of energy is an indication of the concentration of halogenated vapors in the sample.

ORDERING INFORMATION

RI-413A gas monitor73-0569RK
Carrying case with shoulder strap20-0293RK
Gas sampling probe80-0153RK
Gas sampling hose (1m)80-0012RK
Alkaline battery, "D" size (requires 6)49-1140RK

OPTIONAL ACCESSORIES

Charger49-2145RK
Continuous operation adapter, 115 VAC49-2046RK
Ni-Cd battery "D" cells (requires 6)49-1240RK

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Authorized Distributor:

RIKEN

PCE-0200

PORTABLE INFRARED CO₂ GAS MONITOR

Simple Operation.



MODEL RI-85

FEATURES

- Microprocessor controlled.
- Instantaneous, Peak, and Average values provided.
- Compact and lightweight (Approx. 500grs).
- Audible and visual alarms.
- Internal sample drawing pump.
- LCD digital display with backlighting.
- Recorder output signal (0-1V linear).

MAIN APPLICATIONS:

- Indoor Air Quality CO₂ level testing.
- Safe CO₂ breathing levels in plants or factories.
- Leak checking on CO₂ Fire extinguishing equipment.
- Check before entering after CO₂ extinguisher use.
- Exhaust gas leak from combustion appliances in homes or plants.



RIKEN KEIKI CO.,LTD.

Highly accurate & reliable Model RI-85

Outline:

This Model RI-85 is a compact, light-weight portable CO₂ monitor with an Infrared (NDIR) type sensor.

This sensor provides fast and accurate detection of CO₂ levels from 0 to 10,000 ppm. An internal pump is utilized for continual sampling, and the unit operates for 12 hours from one set batteries. Microprocessor control provides average readings over a selected time period, and also can display the peak value detected.



■ Specifications

Detection principle	Non-Dispersive Infrared Detection (NDIR)
Measuring gas	Carbon dioxide (CO ₂) in air
Measuring range	0-10,000 ppm
Resolution	10 ppm/digit from 0-2,000ppm, 25 ppm/digit from 2,000-5,000 ppm, 50 ppm/digit from 5,000-10,000 ppm
Sampling method	Sample-drawing with internal pump
Repeatability	± 3% F.S. (with constant conditions).
Alarm display	Audible and visual alarms (non-latching).
Alarm point	Any one level selection of 1,000 ppm, 5,000 ppm, or OFF
Response time	Within 15 seconds to 90% response.
Ambient temperature and humidity	-10~+40°C, (14-104°F), less than 90%RH (Non-condensing).
Power source	AA size dry battery x 4 pcs.
Continuous operation	Approx. 12 hours (Alkaline batteries, no alarms or no illumination, room temp.).
Dimensions and weight	Approx. 85mm(W) x 190mm(H) x 40mm(D). 500gr. Approx. 3.5"(W) x 7.8"(H) x 1.6"(D). 1.1lb.
Display	Current reading, Average value, or Peak reading. (Pushbutton Select).
Average value time	Selected from 1 minute, 3 minutes, or 15 minutes
External output signal	0-1V DC linear output
Accessories	Carrying case..1, Spiral tube(1m)..1, Gas sampling probe..1 Absorption tube for zero adjust..1, Dry battery..4, Alkaline AA batteries..4
Optional accessories	Gas cylinders for zero and span calibration, sample bag, Absorptive agent for zeroing, jack for external output.

Specifications subject to change without notice



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C5E-0120

Dual auto range from 0 – 100vol% to 0 – 100%LEL

PORTABLE INFRARED HC GAS DETECTOR

Explosion proof: Approval from Ministry of Labor, Japan
Approval from Nippon Hakuyohin Kentei Kyokai
Japan Maritime Inspecting Organization
OCIMF (Oil Companies International Marine Forum) conformed

MODEL **RI-415**

HC or CH₄ measurement in inert gas

Highly accurate and reliable!



Features

- ▶ Available to measure from higher concentration (vol%) to lower concentration (%LEL)
- ▶ Explosion proof (Detector-explosion proof, other electrical circuit, pump-intrinsically safe design)
- ▶ Available to measure HC or CH₄ in N₂ or inert gas with a reliable NDIR method

Applications

- ▶ Measurement of gas concentration in tank of LNG carriers, LPG carriers
- ▶ Measurement of gas concentrations in crude oil tanker



RIKEN KEIKI

Highly accurate & reliable

MODEL RI-415

OUTLINE

This Model is a portable HC or CH₄ detector with an Infrared (NDIR) type sensor. This sensor style provides accurate detection of HC or CH₄ gas levels even in N₂ and inert environment. The measuring ranges are 0-100 Volume% and 0-100% LEL, with automatic ranging. The RI-415 has explosion proof and Intrinsic safety construction so it can be used safely in any environment.

*When ordering, please specify either HC or CH₄.

SPECIFICATIONS

Model	RI-415	RI-415
Gas	HC	CH ₄
Detection principle	Non dispersive infrared method	
Range	0-100%LEL/0-100vol% (Auto)	
Increment	0.5%LEL/0.5vol%	
Indication accuracy	Within ±5% of reading	
Response time	Within 30 seconds (T90)	
Sampling	Suction pump	
Ambient temp/humidity	-10°C~40°C / below 90%RH	
Power source	Alkaline batteries (Size C) 4pcs	
Continuous operation time	Approx. 50 hours (no alarm/no light at 20°C)	
Explosion proof	Exiad II BT3	
Dimension/weight	200(W)×80(H)×142(D)mm/approx. 2kg (including batt.)	
Additional function	Low battery voltage alarm, Trouble alarm (disconnection of detection cell), Peak hold	

Specifications subject to change without notice.

STANDARD ACCESSORIES

- ① Alkaline battery.....4 pcs
- ② Plastic filter (absorbent cotton).....1 pce
with flow monitor and connection line with couplings
- ③ Sampling line complete with couplings (30m).....1 pce
for LEL range
- ④ Carrying case with shoulder strap.....1 pce
- ⑤ Absorbent cotton.....1 pack
- ⑥ Metal storage box.....1 pce
- ⑦ Calibration kit
Gas sampling bag (for LEL range).....1 pce
Gas sampling bag (for VOL range).....1 pce

OPTIONAL ACCESSORIES

- ① Calibration gas cylinder for CH₄ LEL
- ② Calibration gas cylinder for CH₄ VOL
- ③ Calibration gas cylinder for HC LEL
- ④ Calibration gas cylinder for HC VOL

* Being supplied from local agent.



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RIKEN HC 0-100%LEL to 0-100 vol% auto ranging and O₂ 0-25 vol% or
CH₄ 0-100%LEL to 0-100 vol% auto ranging and O₂ 0-25 vol%

PORTABLE COMBINATION HC/O₂ GAS DETECTOR

MODEL **RX-415**

*New gas detector for IGS application !!
HC/O₂ or CH₄/O₂ measurement in N₂
inert and air atmospheres*

Highly accurate and reliable!



Features

- ▶ Available to measure from higher concentration (vol%) to lower concentration (%LEL)
- ▶ Explosion proof (Detector:Explosion proof, Other electrical circuit and pump:Intrinsically Safe design)
- ▶ Available to measure HC/O₂, CH₄/O₂ in N₂, inert gas and air with a reliable NDIR method

Applications

- ▶ Measures gas concentrations in tank of LNG and LPG carriers.
- ▶ Measures gas concentrations in crude oil tankers
- ▶ Measures gas concentration in inert gas generating system (IGS)



RIKEN KEIKI

Highly accurate & reliable

MODEL RX-415

OUTLINE

This model has two versions and is a combination type portable HC/O₂ or CH₄/O₂ gas detector with an Infrared (NDIR) type sensor and galvanic cell type sensor. These sensors provide accurate detection of HC/O₂(HC version) or CH₄/O₂(CH₄ version) levels even in N₂ and other inert environments. The measuring ranges are 0-100%LEL/0-100 vol% for HC or CH₄ and 0-25 vol% for O₂ respectively with automatic ranging. The RX-415 has explosion proof and Intrinsically Safe construction so that it can be used safely in any environment.

SPECIFICATIONS

Model	RX-415 (HC version)		RX-415 (CH ₄ version)	
	HC	O ₂	CH ₄	O ₂
Detection principle	NDIR (Non-Dispersive infrared)	Galvanic cell	NDIR (Non-Dispersive infrared)	Galvanic cell
Range	0-100%LEL (0.5%LEL/digit) 0-100vol%(0.5%vol/digit) (Auto range)	0-25vol%(0.1vol% / digit)	0-100%LEL (0.5%LEL/digit) 0-100vol%(0.5%vol/digit) (Auto range)	0-25vol%(0.1vol% / digit)
Response time	Within 30 seconds (T90)			
Sampling	Suction pump (built in)			
Ambient temp/humidity	-10°C~+40°C / below 90%RH (Non-condensing)			
Power source	Alkaline batteries (Size C) 4pcs. (or Ni-Cd batteries (Size C) 4pcs. Optional)			
Continuous operation time	Approx. 40 hours (no alarm or light, at 20°C)			
Explosion proof	Exiad II BT3 (Alkaline batteries "Size C" only) (Pending)			
Dimension/weight	Approx. 200(W)×80(H)×142(D)mm/approx. 2 kg (including batteries)			
Alarm functions	Low battery voltage, Sensor connection failure, Sampling pump connection failure, System failure, Calibration failure (With failure message, alarm lamp and/or alarm buzzer)			
Feature	Peak hold, Self diagnosis			

• Specifications subject to change without notice.

STANDARD ACCESSORIES

- ① Filter tube with flow monitor1 pce
- ② Connection tube (green)1 pce
- ③ Spiral sampling tube1 pce
- ④ Gas sampling probe1 pce
- ⑤ Carrying case with shoulder strap1 pce
- ⑥ Alkaline battery (size C)4 pcs
- ⑦ Operation manual1 sheet

OPTIONAL ACCESSORIES

- ① Sampling tube (30m)1 pce
- ② Gas sampling bag1 pce
- ③ Ni-Cd battery charger1 pce

Notes : The calibration gas cylinder would be supplied from RKK local agent.



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RIKEN

MARINE COMBINATION GAS DETECTOR

New gas detector for

- Model RX-515 : LNG carrier
CH₄ : 0-100%LEL to 0-100%vol
O₂ : 0-25%vol
CO : 0-1,000ppm
CO₂ : 0-20%vol
- Model RX-516 : Crude oil tanker
HC : 0-100%LEL to 0-100%vol
O₂ : 0-25%vol
H₂S : 0-100.0ppm
- Model RX-517 : Crude oil tanker
HC : 0-100%LEL to 0-100%vol
O₂ : 0-25%vol
H₂S : 0-100.0ppm and 0-1,000ppm

MODEL **RX-515**

MODEL **RX-516**

MODEL **RX-517**

MED approved, with "Wheel mark"
Intrinsically Safe design
(Exiad I BT3X)

Highly accurate and reliable!



Applications

- LNG carrier storage vessel gas monitoring.
- Crude oil tanker storage tank gas monitoring.

Features

- Dual range detection of CH₄ or HC in %vol and %LEL.
- Unique gas combinations include : CH₄/O₂/CO/CO₂
HC/O₂/H₂S
- Accurately measure CH₄ or HC from inerted tanks with infrared sensor.
- High range H₂S 0-1,000ppm available (RX-517).
- Intrinsically safe design.
- Datalogging (Max 30hours of interval trend).



WHEEL MARK



(TOKYO PLANT - OKEGAWA FACTORY)



95QR-007



(HEAD OFFICE - TOKYO PLANT)



97ER-005



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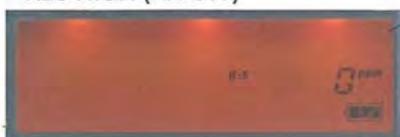
■ CRUDE OIL TANKER Application

This model is a combination type portable HC, O₂ and H₂S gas detector with an Infrared (NDIR) type sensor, galvanic cell type sensor and Electro-chemical cell type sensor. These sensors provide accurate detection of HC, O₂ and H₂S levels even in N₂ and other inert environments. The measuring ranges of model RX-516 are 0-100%LEL/0-100%vol for HC, 0-25%vol for O₂ and 0-100.0ppm for H₂S respectively. A higher range for H₂S (0-1,000ppm) is available in model RX-517. A manual switch is used to change the flow to a unique path for high H₂S applications to protect the other sensors. The RX-516/RX-517 has an explosion proof and Intrinsically Safe design so that it can be used safely in any environment.

• H₂S LOW (RX-516 & RX-517)



• H₂S HIGH (RX-517)



<LCD display>



<H₂S LOW>



<H₂S HIGH>

To measure high concentration Hydrogen sulfide (H₂S), the model RX-517 applies a special H₂S sensor with range 0-1,000ppm. When measuring high concentration H₂S, turn the switch from "H₂S LOW" to "H₂S HIGH". This switch changes the LCD display, and unique flow path protects other sensors from exposure to high concentrations of H₂S.

• Specifications

Model	RX-516 (HC/O ₂ /H ₂ S 0-100.0ppm)		RX-517 (HC/O ₂ /H ₂ S 0-100.0ppm & 0-1,000ppm)	
Gas detected	Iso-butane (HC)	Oxygen (O ₂)	Hydrogen sulfide (H ₂ S)	
Detection principle	NDIR (Non-Dispersive infrared)	Galvanic cell	Electro-chemical cell	
Detection range (digit)	0-100%LEL (0.5%LEL) 0-100%vol (0.5%vol)	0-25.0%vol (0.1%vol)	<LOW> 0-100.0ppm (0.5ppm)	<HIGH> 0-1,000ppm (1ppm)
Alarm types	Gas alarms : Off (Optional : 1 st and 2 nd (user adjustable), Self-resetting) Trouble alarms : sensor connection, low battery, circuit trouble and calibration error			
Alarm methods	Gas alarms : intermittent buzzer, flashing lights, blinking gas concentration reading Trouble alarms : continuous buzzer, lights on, trouble displayed			
Sampling method	Internal sample pump			
Flow rate	400~500 ml/min			
Response time (T90) (with 1m sampling hose)	Less than 30 sec.	Less than 20 sec.	Less than 30 sec.	Less than 30 sec.
Accuracy (at 25°C)	+/- 5% of F/S or +/-10% of indication value	+/- 0.7vol%	0-30ppm: +/- 1.5ppm 30.5-100.0ppm: +/- 15% of Indication value	+/- 20% of indication value (101-1,000ppm)
Power source	Alkaline batteries (Size C) 4pcs			
Continuous operation	Alkaline battery : Approx. 30 hours (no alarm or light, at 25°C)			
Dimension & Weight	Approx. 200(W) × 80(H) × 142 (D)mm Approx. 1.8kg (including batteries)			Approx. 2.0kg (including batteries)
Operating Temp. & Humidity	-10~+50°C, below 90%RH (non-condensing)			
Display	Digital LCD (with back light)			
Safety rating	Exiad II BT3X (Alkaline batteries "Size C" only), MED approved			
Special functions	Peak hold, Datalogging High concentration hydrogen sulfide range with manual switch (RX-517)			
Standard accessories	① Carrying case with shoulder strap, ② Filter tube with flow monitor and junction tube, ③ Gas sampling hose, ④ Gas sampling probe, ⑤ Alkaline batteries(4pcs), ⑦ Instruction manual			

• Specifications subject to change without notice.

■ LNG CARRIER Application

This model is a combination type portable CH₄, O₂, CO and CO₂ gas detector with an Infrared (NDIR) type sensor, galvanic cell type sensor and Electro-chemical cell type sensor. These sensors provide accurate detection of CH₄, O₂, CO and CO₂ levels even in N₂ and other inert environments. The measuring ranges are 0-100%LEL/0-100%vol for CH₄, 0-25%vol for O₂, 0-1000ppm for CO and 0-20.0%vol for CO₂ respectively. The RX-515 has an explosion proof and Intrinsically Safe design so that it can be used safely in any environment.



<LCD display>

● Specifications

Model	RX-515			
Gas detected	Methane (CH ₄)	Oxygen (O ₂)	Carbon monoxide (CO)	Carbon dioxide (CO ₂)
Detection principle	NDIR (Non-Dispersive infrared)	Galvanic cell	Electro-chemical cell	NDIR (Non-Dispersive infrared)
Detection range (digit)	0-100%LEL(0.5%LEL) 0-100%vol(0.5%vol)	0-25%vol (0.1 %vol)	0-1,000ppm (1ppm)	0-20.0%vol 0-2%vol(0.01 %vol) -5%vol(0.05 %vol) -20%vol(0.1 %vol)
Alarm types	Gas alarms : Off (Optional : 1 st and 2 nd (user adjustable), Self-resetting) Trouble alarms : sensor connection, low battery, circuit trouble and calibration error			
Alarm methods	Gas alarms : intermittent buzzer, flashing lights, blinking gas concentration reading Trouble alarms : continuous buzzer, lights on, trouble displayed			
Sampling method	Internal sample pump			
Flow rate	400~500 ml/min			
Response time (T90) (with 1m sampling hose)	Less than 30 sec.	Less than 20 sec.	Less than 30 sec.	Less than 30 sec.
Accuracy (at 25°C)	+/- 5% of F/S or +/-10% of indication value	+/- 0.7vol%	0-150ppm: +/- 15ppm 151-1,000ppm: +/- 15% of Indication value	+/- 5% of F/S
Power source	Alkaline batteries (Size C) 4pcs			
Continuous operation	Alkaline battery : Approx. 30 hours (no alarm or light, at 25°C)			
Dimension & Weight	Approx. 200(W) × 80(H) × 142 (D)mm Approx. 1.8kg (including batteries)			
Operating Temp. & Humidity	-10~+50°C, below 90%RH (non-condensing)			
Display	Digital LCD (with back light)			
Safety rating	Exiad II BT3X (Alkaline batteries "Size C" only), MED approved			
Special functions	Peak hold, Datalogging			
Standard accessories	① Carrying case with shoulder strap, ② Filter tube with flow monitor and junction tube, ③ Gas sampling hose, ④ Gas sampling probe, ⑤ Alkaline batteries (4pcs), ⑥ CO ₂ scrubber (RX-515), ⑦ Instruction manual			

● Specifications subject to change without notice.

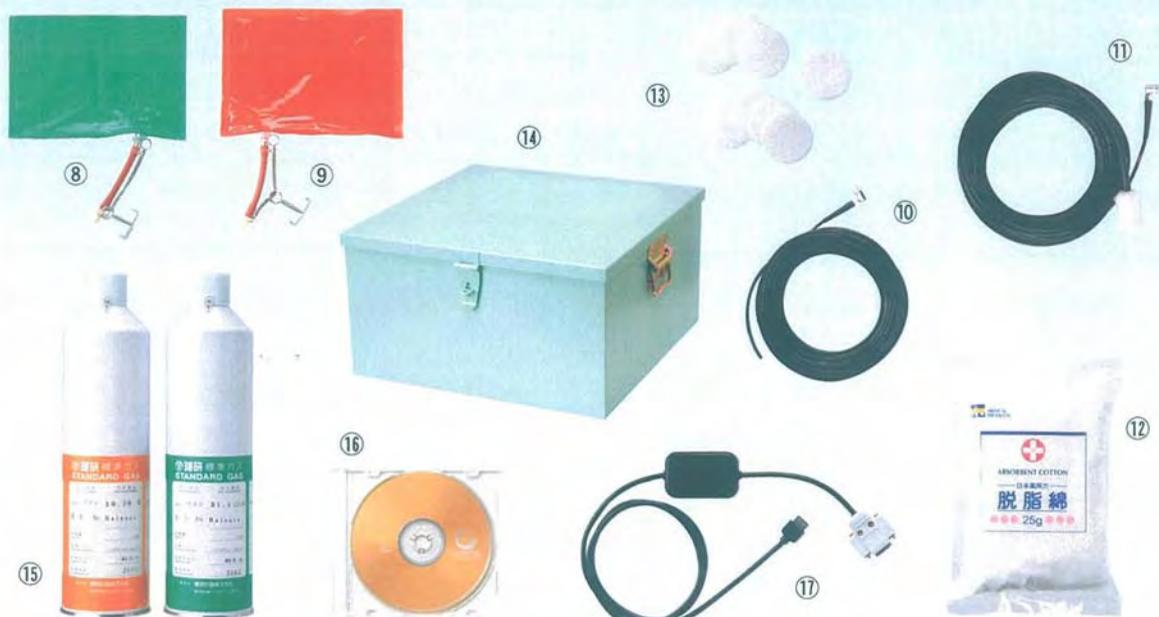
● Standard accessories

- ① Carrying case with shoulder strap
- ② Filter tube with flow monitor and junction tube
- ③ Gas sampling hose
- ④ Gas sampling probe
- ⑤ Alkaline battery (Size C) 4pcs
- ⑥ CO2 scrubber (RX-515)
- ⑦ Instruction manual



● Optional accessories

- ⑧ Gas sampling bag 1L (LEL)
- ⑨ Gas sampling bag 1L (VOL)
- ⑩ Gas sampling hose 30m with plummet
- ⑪ Gas sampling hose 30m with float type sampling head
- ⑫ Absorbent cotton
- ⑬ Water proof filter for filter tube
- ⑭ Metal storage box
- ⑮ Calibration gas cylinder
- ⑯ Datalogging software
- ⑰ Communication cable



A9812



ISO 9001:2000

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★ Distributed by:

237 series

Model NP-237H

Applied by H.K (Ship equipment inspection society)
Approved by N.K register of shipping in Japan
Approved cert No. A-5279 (NP-237H Marine spec)
by DNV (Det Norske Veritas) in Norway



Features

- LEL to 100% by vol with 4 range change-over switch
- Two version either for land use or marine use
- Suited for detection of HC gas/vapours in an inert gas
- Intrinsically safe in Japan

Specifications

Detection principle	Catalytic combustion, thermal conductivity
Measurable gas	Combustible gas (LPG, Gasoline & LEL scale) in air
Measuring range	0-10/0-100%LEL & 0-20/0-100% by vol
Accuracy	Better than $\pm 20\%$ of F.S for 10%LEL range Better than $\pm 5\%$ of F.S for 100%LEL range Better than $\pm 5\%$ of F.S for 20% by vol range Better than $\pm 20\%$ of reading
Operating temp.	$-10^{\circ}\text{C} \sim +40^{\circ}\text{C}$
Batteries & operating hrs	Dry battery $\times 4$ pcs (std), Ni-Cd battery or 7 hrs minimum by alkaline battery
Dimensions & weight	160(W) \times 90(H) \times 150(D) mm, Approx 2.7 kg



LOW COST TRANSMITTER

Gas Detection For Life

M-Series



Features

- Water/dust resistant housing
- Available for CO and H₂S
- Long life sensors (2 + years typical)
- Competitively priced
- Compact design

Applications

- Water & wastewater treatment plants
- Pulp & paper mills
- Gas, telephone & electric utilities
- Parking garages
- Manufacturing facilities
- Loading docks

Some gas monitoring requirements are basic but important. The RKI M-Series transmitter is a highly reliable and very cost-effective 4-20 mA transmitter for the detection of carbon monoxide and hydrogen sulfide. This transmitter operates from a 24 VDC (11 VDC to 30 VDC) power source and provides a 4–20 mA output signal, which can be connected to a wide variety of RKI or third party controllers. The M-Series transmitters are built for use in either indoor or semi-enclosed areas.

The electronics are protected inside a plastic enclosure to avoid damage from mechanical abuse, water, dust or corrosion. Sensors for the M-Series have a long life-span that typically last two to three years.

Field calibrations are very basic and can be completed by a single person. The zero and calibration functions for the M-Series are performed by simply adjusting potentiometers on the amplifier board. The amplifier board is equipped with easily accessible test jacks for the connection of a voltmeter. The voltmeter is used to view sensor response while the calibration gas is being applied and the potentiometers are adjusted with a screwdriver.

M-Series Transmitter

Part #	H2S 65-2424RK	CO 65-2434RK
Measuring Ranges	0 - 100 ppm H ₂ S	0 - 300 ppm CO
Operating Voltage	11 VDC to 30 VDC	
Max Current Draw	25 mA (2 wire system)	
Signal Output	4 mA at 0 ppm H ₂ S 20 mA at 100 ppm H ₂ S	4 mA at 0 ppm CO 20 mA at 300 ppm CO
Response Time	45 seconds to 90% of concentration	30 seconds to 90% of concentration
Operating Environment		
<i>Location</i>	Indoors or semi-enclosed areas	
<i>Temperature</i>	0 to 120° F	
<i>Humidity</i>	0 - 99% RH, non-condensing	
Housing	Plastic, water/dust resistant enclosure 2.5" W x 4.0" H x 1.5" D	
Sensor		
<i>Type</i>	Electrochemical	
<i>Life Expectancy</i>	2 years normal service when intermittently exposed to H ₂ S	2 to 3 years normal service
Controls		
<i>Zero</i>	Sets transmitter output to 4 mA with zero output from H ₂ S sensor	Sets transmitter output to 4 mA with zero output from CO sensor
<i>Span</i>	Sets transmitter output to 20 mA with 100 ppm output from H ₂ S sensor	Sets transmitter output to 20 mA with 300 ppm output from CO sensor
Tools Needed	Screwdriver and voltmeter used to make adjustments	
Warranty	One year on electronics, one year on sensor.	

Specifications subject to change without notice.

Made in the USA



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Authorized Distributor:



SINGLE POINT STAND ALONE MONITOR

Gas Detection For Life

PS 2 Model



Features

- LEL or PPM detection ranges available for many gases
- 2 alarm levels
- Stand alone system
- Input voltages: 115 VAC standard, 24 VDC or 48 VDC (optional)
- Audible and visual alarms
- Compact design
- Simple installation
- AC version equipped with power cord
- Relay contacts rated 12A @ 115 VAC
- Low maintenance

Industry Applications

- Battery storage locations
- Petrochemical plants
- Refineries
- Water & wastewater treatment plants
- Degreasers
- Gas, telephone, & electric utilities
- Manufacturing facilities
- Steel
- Automotive
- HVAC

A perfect low cost solution for hydrogen detection in battery rooms, or for LEL or PPM level detection of a variety of flammable or solvent vapors in general industry.

The Model PS 2 is a multipurpose gas monitor utilizing a MOS (metal oxide sensor) for long lasting and low maintenance detection at the LEL or PPM levels of many gases or vapors. The PS 2 has two alarm levels for increasing gas or vapor levels, at the PPM level for detection of many solvent vapors, or for LEL level detection of flammable vapors. Inquire at the factory for your specific requirement. Each alarm level activates a 12 amp relay inside the unit, and terminals are provided for wiring the relay to activate an external alarm device or some other device such as a ventilation fan.

This stand alone unit is housed in a durable plastic enclosure with flanges provided for wall mounting and is designed with easy access wiring hubs on the bottom of the unit. The front of the PS 2 contains three lights; Pilot, Alarm 1, and Alarm 2. An internal audible alarm (85 db) activates in a gas alarm condition.

The standard PS 2 is supplied with the gas sensor located on the end of a 30 foot cable (other cable lengths are also available). Each unit is powered by 115 VAC standard or 24 VDC as standard (48 VDC versions optional), and the AC version comes complete with a 6' power cord.

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World Leader In Gas Detection & Sensor Technology
www.rkiinstruments.com

Outputs

Relays 12 amp rated contacts for each alarm

Audible 85 db alarm at 10 cm

Visual Alarm 1: Orange LED
Alarm 2: Red LED

Environmental

Operating Temp 35°F to 120°F (2°C to 49°C)

Relative Humidity 10 - 95% RH, non condensing

Detectable Gases

The PS 2 uses a Metal Oxide Semiconductor (MOS) type sensor for the detection of gases and vapors. This MOS sensor is known for its very long life and truly low maintenance requirements. The PS 2 and its MOS sensor effectively respond to a wide variety of hydrocarbons and other gases or vapors. Alarms can be set for OSHA established TLV levels for many gases or solvent vapors, and at LEL levels for flammable vapor warnings.

Since the PS 2 sensor is a general hydrocarbon sensor, it is not specific to any particular gas. This instrument will perform best if used in an area where the only gas or vapor present, besides fresh air, is the gas or vapor that you wish to detect. If used in an area contaminated with many different gases or vapors, false alarms may occur. Please carefully evaluate the application and the area to ensure that no interfering gases are present.

The PS 2 is an effective solution for solvent vapor monitoring around degreasers or other processes, hydrogen monitoring in battery rooms, natural gas detection in basements around landfills, and many others. Please consult the factory for practical alarm points for your application.

Partial List Of Detectable Gases

Many other gases available. Contact RKI for gases not listed

Ethyl Alcohol	C ₂ H ₅ OH	Methane	CH ₄
Gasoline		Methylene Chloride	CH ₂ Cl ₂
Hexane	C ₆ H ₁₄	Perchloroethylene	CCl ₂ CCl ₂
Hydrogen	H ₂	Toluene	C ₇ H ₈
Iso-Butane	i-C ₄ H ₁₀	Trichloroethane	ClCH ₂ CHCl ₂
Isopropyl Alcohol	(CH ₃) ₂ CHOH	Xylene	C ₆ H ₄ (CH ₃) ₂

Specifications subject to change without notice.

Made in the USA

Physical

Dimensions Height: 6.85" 174 mm
Width: 6.48" 165 mm
Depth: 3.30" 84 mm

Enclosure ABS plastic, indoor housing

Sensors

Sensor Types Metal Oxide Semiconductor type (MOS)

Measuring Ranges LEL or PPM levels available for many gases.

Sensor Connector Sensor is connected to 30' extension cable wired to terminals inside unit. Cable length can be decreased or increased as needed.

Power

115 VAC or 24 VDC
48 VDC (option)

Warranty

One year materials and workmanship.



A9812



ISO 9002:1994

Authorized Distributor:

RIKEN

Continuous monitoring for FC, HCFC, HFC and IPA

INFRARED SINGLE GAS MONITOR**MODEL RI-257****General**

The model RI-257 series are designed to measure the presence of either Fluoro compound (FC) gas, Hydrofluoro compound (HFC or HCFC) gas representing VERTREL XP (HFC-134a) or IPA in the specified range through the built-in continuous operation pump.

As they are based on NDIR (Non-Dispersive Infrared) method, the sample gas specified can be measured without interference from other gases.

Features

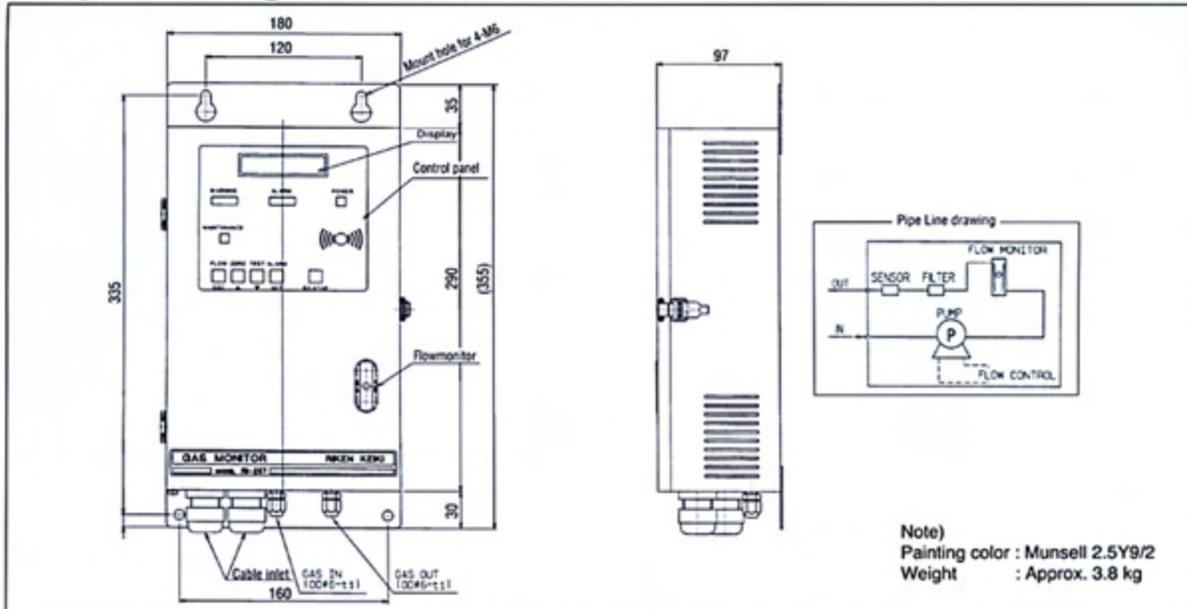
- Compact & light weight (Approx 3.8 kg)
- Easy to install
- Negligible interference from other gases
- Easy to read digital display

Applications

- Cleaning processes
- Cold-storage plants
- Drying rooms
- Refrigerators

**RIKEN KEIKI**

Component designation for Model RI-257



Specifications for Model RI-257

Model	RI-257
Detection principle	NDIR (Non-dispersive Infrared)
Measuring gas and range and alarm point	See the detection chart in the right.
Sampling method	Sample-drawing by built-in pump
Alarm point	Dual alarm (WARNING/ALARM) Run : Latched mode (non-latched after alarm check) Alarm lamp : Lamp display (Yellow/Red) Contact output : a contact (b contact option) Contact rating : AC125V 0.1mA-0.5A(Resistance load)
Repeatability	±3% of F.S
Alarm delay time	Within 30 seconds by supplying 1.6 times the density gas of alarm preset point.
External output	4-20mA (Current outputting type), Max 300 ohms (resistance load)
Warming up	60 min after turns on power (but measurement starts in 2 min after power on.)
Power source & Power consumption	Power : AC 100V, AC117V, or AC220V±10%, 50/60Hz, max 50VA
Ambient temp/humidity	0~+40°C, 30-90%RH, Non-condensing
Mounting method	Wall mounting
Dimensions	Approx. 180 (W) X355 (H) X97 (D) mm
Weight	Approx. 3.8 kg
Painting color	Munsell 2.5 Y 9/2

Specifications subject to change without notice.

Gases and ranges detection chart

Gas detection	Range	Alarm set point
1) FC-14 (*)	0-10000 ppm (50ppm/digit)	3000 ppm
2) FC-116 (*)	0-5000 ppm (25ppm/digit)	2000 ppm
3) FC-C318 (*)	0-5000 ppm (25ppm/digit)	2000 ppm
4) Flon 23	0-10000 ppm (50ppm/digit)	3000 ppm
5) Flon 32	0-10000 ppm (50ppm/digit)	3000 ppm
6) Flon 41	0-5.000 vol% (0.025vol%/digit)	2.000vol%
7) Flon 134a (Vertrel XP)	0-5000 ppm (25ppm/digit)	2000 ppm
8) Flon 225	0-5000 ppm (25ppm/digit)	2000 ppm
9) IPA (Iso-propyl alcohol)	0-10000 ppm (50ppm/digit)	3000 ppm

※ When ordering, please specify one of those specified gases above.
(*) FC means Perfluoro compound gas

Standard accessories

Fuse
Dust filter
Instruction manual
Test certificate

Optional accessories

Gas sampling bag
MC filter



A9812



ISO 9001:2000

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● Distributor:



INFRARED CO₂ GAS MONITOR

Gas Detection For Life

RI-215 Series



Features

- Easy to read LCD digital display
- Compact, lightweight and easy installation
- Highly reliable non-dispersive infrared detection method
- Recorder output signal
- Automatic control of ventilation systems
- Alarm contact output provided
- 4-20 mA output provided
- Diffusion or sample draw versions available

Applications

- Meets ASHRAE 1969 IAQ Standard of 2,000 ppm max PEL
- Detection of CO₂ for NFPA 12 Regulations-CO₂ storage tank leaks
- Green houses, wineries, breweries, food processing, indoor air quality, and other industry applications

The RI-215 series of IR CO₂ monitors are widely used in the measurement and control of CO₂ levels in a variety of applications where CO₂ monitoring or detection is required. A highly accurate, RKI non-dispersive infrared absorption sensor is used to provide direct measurements through diffusion or sample draw monitors, and activate alarms or control ventilation systems based on preset CO₂ levels. Each model provides a digital readout in parts per million of CO₂ providing precise measurement and direct visual indication of gas levels. A 4-20 mA output is provided to send a signal to a fire panel or other PLC system and a relay is available to trip an alarm or activate a ventilation system.

Three levels of measurement are provided: 0-2,000 ppm (ASHRAE 1969 IAQ max PEL), 0-5,000 ppm (leak detection of CO₂ storage tanks) 0-9,999 ppm, and 0-5%. The RI-215A runs on 24 VAC or 24 VDC and the RI-215D with sample drawing pump runs on 115 VAC or 220 VAC. Each are designed for indoor use only and supplied in a NEMA 12 enclosure that is easily accessible for calibration, service, and continuous monitoring. RKI offers additional monitors with higher measurement levels in portable or fixed installation applications. Please contact an RKI authorized representative for more information on other CO₂ monitors available.

RI-215 Series

Model		RI-215A	RI-215D
Detection Method		Non dispersive infrared absorption method (NDIR)	
Sample Method		Diffusion	Sample drawing pump
Measuring Gas		Carbon dioxide (CO ₂) in air	
Measuring Range		0-2,000 ppm, 0-5,000 ppm, 0-9,990 ppm, or 0-5% * Specify one of these ranges when ordering	
Resolution		1 ppm for 0-2,000 ppm 10 ppm for 2,000-9,990 ppm	
Repeatability		± 3% of full scale (at constant temperature and humidity conditions)	
Output Signal		0-10 VDC linear (load resistance: Min. 300K Ω), or 4-20 mA DC linear (load resistance: Max. 500 Ω) *Specify one of these outputs when ordering	
Flow Rate		N/A	Above 1.0 liter/min
Alarm	Alarm Range	50 ppm - Full scale (adjustable in steps of 10 ppm) *Standard alarm point 1,000 ppm	
	Alarm	125 VAC, 0.5 A (load resistance), Dry contact (normally open)	
Operation Temp. & Humidity		0 ~ 40°C (32-104°F), 10-90%RH (non-condensing)	
Warming Up Time		30 minutes for full warm up (display starts after 1 minute)	
Power Requirement		24 VDC ± 10% or 24 VAC ± 10%	115 VAC or 220 VAC, ± 10%, 50/60 Hz
Installation Method		Wall mount vertically, indoor locations only	
Outer Dimensions		Approx 78(W) x 78(H) x 31(D) mm Approx 3.1(W) x 3.1(H) x 1.2(D) in.	Approx 220(W) x 200(H) x 76(D) mm Approx 8.7(W) x 7.9(H) x 3.0(D) in.
Weight		Approx. 200g (6.50 oz.)	Approx. 3.6kg (7.9 lbs.)

Symptoms of Exposure to CO₂

CO ₂ %	Symptom
0.1	Typical office environment CO ₂ hygiene control level (1,000 ppm)
0.2	ASHRAE maximum permissible limit (2,000 ppm)
0.5	TLV (Threshold Limit Value) Level (5,000 ppm)
1~2	Restless
3~5	Increased rate of breathing. Pulse and blood pressure increase. Eventually headache and dizziness occur.
6~7	Breathing becomes difficult
7~10	Unconscious within a few minutes
20	Unconscious within a few seconds and death



RI-215A

RI-215D

* Specifications subject to change without notice.



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RIKEN

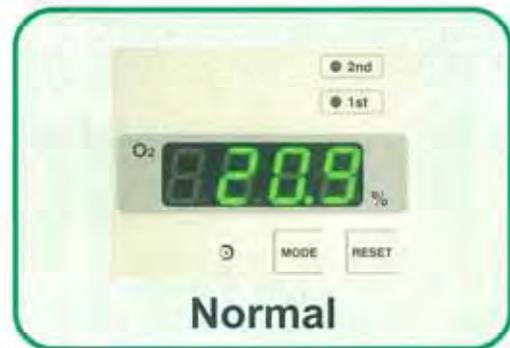
INDOOR OXYGEN MONITOR

MODEL OX-500



Built-in sensor

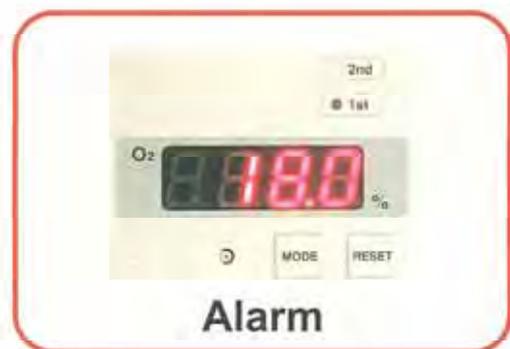
3 color LED Digital Display



Normal



Warning



Alarm

Applications

- Prevent oxygen deficient accidents
- Control oxygen levels
- Laboratories
- Warehouses
- Tunnels
- Clean room
- Basements

Features

- Compact, wall mounting design
- Highly visible 3 color LED digital display
- Remote sensor capability
- Power cable can enter from any direction
- Stores alarm summary data.
(10 alarm occurrence, time and alarm concentration)



95QR 007

Object place of business
Tokyo factory, Okagawa factory



97ER 005

Object place of business
Tokyo factory



RIKEN KEIKI

Specifications

Model Name	OX-500
Detection Principle	Galvanic cell
Sampling Method	Diffusion
Enclosure	Wall mounting (Uses mounting plate or mount in a switch box)
Cable Entry	All directions and the rear
Measuring Range	0~25.0 vol% (0.1 vol% digit)
Display	3 digits , 3 color LED (Green, Orange, Red) , Normal : Green
Types of Alarms	Gas alarm : 2 decrease alarms, latching mode (Non-latching with reset switch) Trouble alarm : Self reset
Preset Alarm Levels	1st : 19.0 vol% , 2nd : 18.0 vol%
Alarm Relays	Normally-open contact for both AL1/AL2, rated 125VAC to 1A (Resistive load)
Display of Alarm	Gas alarm 1 : Flashing orange LED with gas display, flashing AL1 orange LED, intermittent buzzer Gas alarm 2 : Flashing red LED with gas display, flashing AL2 red LED, continuous buzzer sound Trouble alarm : Flashing of red error message [E-**] (Displays error number at**), short intermittent buzzer sound
Outputs	4~20mADC
Operating Temp. & Humidity	0~40°C (0~104°F), below 95%RH, (non-condensing)
Power requirement	100VAC, 50/60Hz, Max 3.5VA, supplied with power cable(3m) or 24VDC, Max 2.0W
Dimensions	Approx. 95(W)×135(H)×35(D)mm
Weight	Approx. 420g (220g for 24VDC operation)

※ Specifications subject to change without notice.

Optional Accessories

Remote sensor

- Cable length : 3m, 5m, 10m, 20m
(Specify when ordering)
- Cable used : EM-MEES (0.5sq) ,
2-core



Remote sensor

Oxygen Deficiency and Its Reaction to Human Being

O2	Symptoms	O2	Symptoms
21%	Normal Oxygen in air	14% ↓ 9%	Fading consciousness, Headache, Nausea, Pale complexion (cyanosis), Slow reaction.
18%	Safety limit, Needs ventilation	10% ↓ 6%	Loses consciousness, Cramps of the whole body.
16% ↓ 12%	Strained breathing, High pulse, Decrease of mental concentration, Headache, Ears ring, Nausea.	Below 6%	No consciousness, Lethargy, Stop breathing, Heart rate stops, Die within 6 min.



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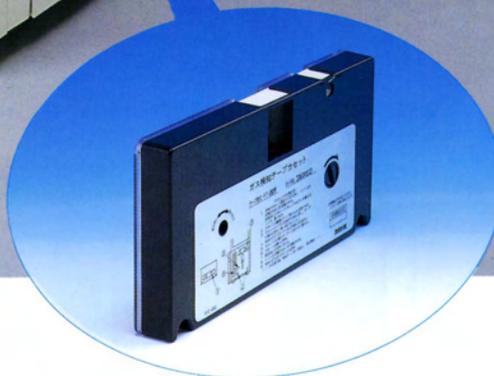
★ Distributed by:

RIKEN

HIGHLY SENSITIVE TOXIC GAS MONITOR

MODEL FP-250A

Cassette tape system with gas card



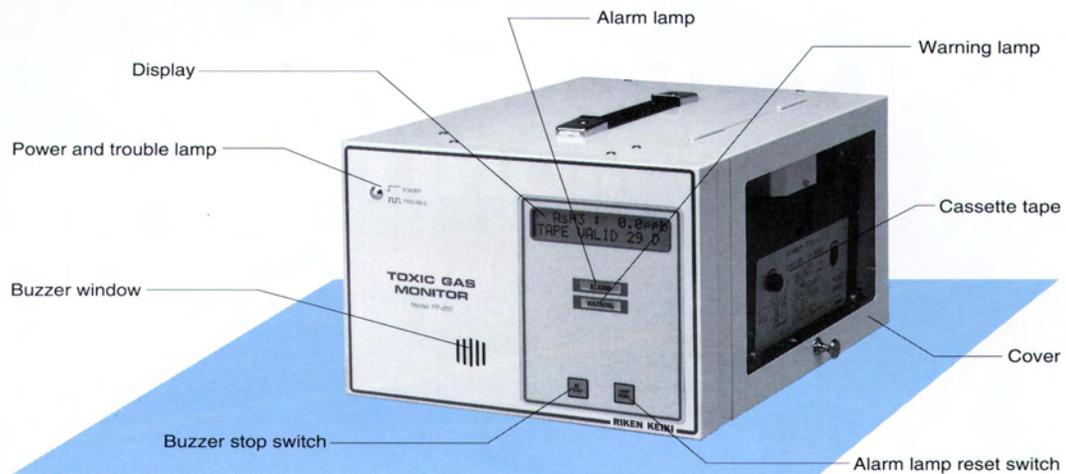
Features

1. Interference-free detection (PPB or PPM digital display)
2. Detection of low gas concentrations (TLV level)
3. Easy to replace cassette tape (cassette remainder display included)
4. Easy to change to other gases by replacing the gas card.
5. Provision for connection to personal computer (RS-232C interface: Optional)
6. Easy to check the detection function and alarm operation with check card.
7. Desk top size promotes easy transportability



RIKEN KEIKI

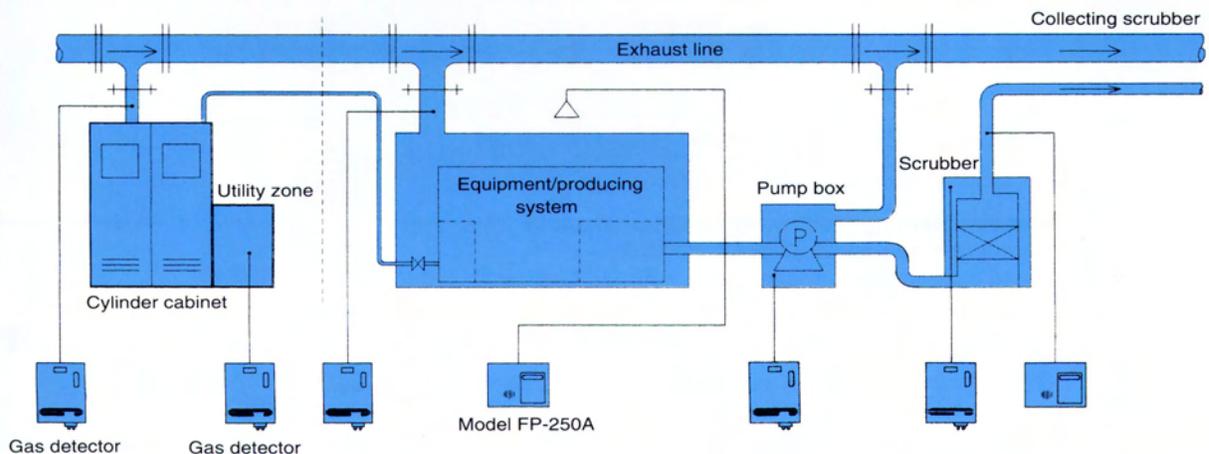
Part Designation



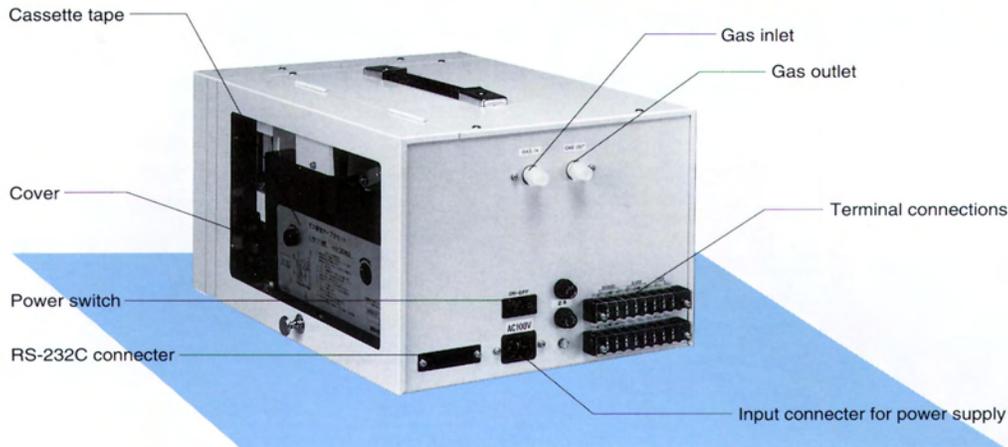
The FP-250A is a highly sensitive toxic gas monitor using a gas detection cassette tape which is almost free of interference from other gases. As the detection tape responds by a chemical reaction with the gas being measured, there is no interference from hydrogen or organic gases. Its best application then is in monitoring of the target gas at the outlet of an absorption scrubber, as well as in monitoring of the work environment for personnel safety..

Since the cassette can be replaced so quickly and easily, detection of multiple gases is practical.

Detection area/point (For example)

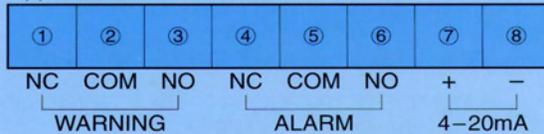


MODEL FP-250A

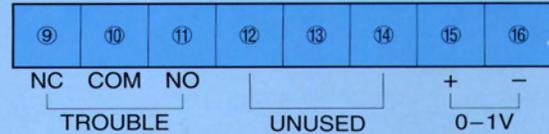


Terminal connections

Upper block



Lower block



Specifications

Detection principle	Photoelectric photometry method using paper tape cassette
Gas detection tape	Cassette method
Alarm response time	Within 60 seconds when exposed to gas concentration of 1.6 times alarm point
Accuracy	Within $\pm 20\%$ of indication value +1 digit at constant conditions
Display	PPB or PPM digital display
Operating time for cassette tape	One month (with no alarm) • Tape remainder display • Alarm display at tape end
Alarm preset value	Warning: 1/6 of full scale, Alarm: 1/3 of full scale
Alarm operation	Latching (standard) or non-latching Lamp (warning – yellow, alarm – red) and buzzer
Self-diagnosis	Flow fail, warning of tape end or tape damage
Output	4-20mA (Non-isolated), 0-1VDC. (RS-232C interface-Optional)
Operating temperature and humidity	5°C~35°C (41°F~95°F), 30%~90%RH
Power supply and power consumption	AC100V, AC115V or AC220V, 50/60Hz, 20VA
Gas inlet	1/4" OD tubing fitting
Outer dimensions and weight	270(W) × 212(H) × 380(D), Approx. 11kg / 10.6"(W) × 8.3"(H) × 15.0"(D), 24lb
Standard accessories	Check card: 1pc Dust filter: 1pc Fuse (2A): 2pc AC power card: 1pc Gas detection cassette tape: 1roll (specify gas and range)
Optional accessories	Additional gas detection cassette tape, Check card, Dust filter, Fuse, RS-232C output

Detectable gases and detection ranges for FP-250A

Detectable gas	TLV value	Detection range	Resolution	Measuring cycle	Cassette tape
Arsine (AsH ₃)	50ppb	100ppb	2.5ppb	for 20 seconds	FT-001
		150ppb	2.5ppb	for 20 seconds	FT-001
		200ppb	2.5ppb	for 20 seconds	FT-001
Phosphine (PH ₃)	300ppb	150ppb	2.5ppb	for 30 seconds	FT-001
		600ppb	5ppb	for 20 seconds	FT-001
		900ppb	5ppb	for 15 seconds	FT-001
Silane (SiH ₄)	5ppm	15ppm	0.25ppm	for 60 seconds	FT-002
Diborane (B ₂ H ₆)	100ppb	200ppb	5ppb	for 60 seconds	FT-002
		300ppb	5ppb	for 60 seconds	FT-002
Hydrogen sulfide (H ₂ S)	10ppm	100ppb	1ppb	for 180 seconds	FT-001
		300ppb	5ppb	for 180 seconds	FT-001
		1000ppb	10ppb	for 30 seconds	FT-001
		10ppm	0.1ppm	for 10 seconds	FT-001
Hydrogen selenide (H ₂ Se)	50ppb	200ppb	2.5ppb	for 60 seconds	FT-001
Chlorine (Cl ₂)	0.5ppm	1.5ppm	0.025ppm	for 20 seconds	FT-003
		1.5ppm	0.01ppm	for 20 seconds	FT-003
Disilane (Si ₂ H ₆)	5ppm	15ppm	0.25ppm	for 60 seconds	FT-001
Hydrogen chloride (HCl)	5ppm	1000ppb	25ppb	for 60 seconds	FT-004
		5ppm	0.1ppm	for 40 seconds	FT-005
Hydrogen fluoride (HF)	3ppm	9ppm	0.1ppm	for 20 seconds	FT-006
Acetic acid (CH ₃ COOH)	10ppm	10ppm	0.25ppm	for 20 seconds	FT-006
Hydrogen bromide (HBr)	3ppm	3ppm	0.05ppm	for 60 seconds	FT-005
Phosgene (COCl ₂)	100ppb	300ppb	5ppb	for 60 seconds	FT-008
Ammonia (NH ₃)	25ppm	1ppm	0.025ppm	for 60 seconds	FT-009
		6ppm	0.1ppm	for 20 seconds	FT-010
Chlorine trifluoride (ClF ₃)	100ppb	500ppb	10ppb	for 60 seconds	FT-006
Tertiary Butyl Phosphine (TBP)	300ppb	500ppb	10ppb	for 90 seconds	FT-001
Tertiary Butyl Arsine (TBA)	50ppb	150ppb	2.5ppb	for 90 seconds	FT-001
VCM (CH ₂ CHCl)	5ppm	15ppm	0.25ppm	for 20 seconds	FT-004
Hydrazine (N ₂ H ₄)	100ppb	400ppb	5ppb	for 120 seconds	FT-010
Formalin (HCHO)	1ppm	3000ppm	50ppm	for 240 seconds	FT-012
		3ppm	0.05ppm	for 300 seconds	FT-011



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RIKEN

Highly Sensitive! FORMALDEHYDE GAS MONITOR

We detect the new World Health Organization level of 0.08 ppm average for 30 minutes.

Model FP-250FL

Photoelectric photometry method with detection tape

Gas detection
Cassette tape

Features

- Highly reliable detection with excellent gas selectivity
- Consecutive monitoring for room environment pollution
- Easy tape replacement with cassette style tape
- Tape remaining display
- Optional recorder available

Application

- Room environment monitoring in new houses
- Inside monitoring of furniture and interior
- Room environment monitoring in new cars
- Particle board and other building materials
- Room environment monitoring in museums



95QR·007



97ER·005

**RIKEN KEIKI**

What is Formaldehyde ?

Formaldehyde is a carcinogenic chemical that is used in glues, deodorants, and many products where quick drying properties are required.

It is also used in hospitals as preserving agent. The World Health Organization has set a standard of 0.08 ppm Average for 30 minutes, and the ACGIH has set a ceiling exposure value of 0.3 ppm.

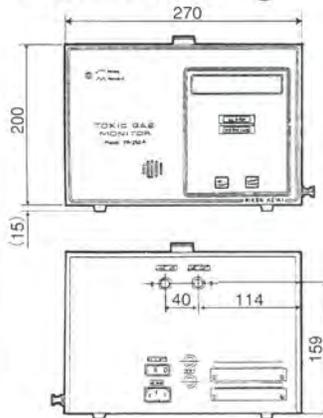
Formaldehyde affects residents of new homes or offices, and is considered as one cause of "SICK BUILDING SYNDROME".

*SICK BUILDING SYNDROME is when residents in new buildings feel dizzy or nauseous. Sometimes it can also cause a skin rash, cough, and liver or kidney damage.

Specifications

Type	Desk top type, "Transportable" FP-250FL	
Detection principle	Photoelectric photometry method using tape cassette	
Detection tape	Cassette tape (Ft-111)	
Detectable gases	Formaldehyde	
Measuring range	0~1.00 ppm	
Measuring cycle	30 minutes per cycle	
Sampling flow rate	1300~1500ml/min at sample inlet	
Sample tube	Upto 2 meters in length	
Lower detectable level	0.01 ppm	
Alarm preset point	2 step, warning and alarm	
Alarm function	Type	Latching or self reset
	Display	Lamp (warning-yellow, alarm-red) and buzzer
Self-diagnosis	Flow fail, tape end warning, trouble with light detection section	
External output signal	4-20mA DC (non-isolated), 0-1V DC	
Operating temperature & humidity	10°C~30°C 30%~90% RH	
Gas inlet	Outer ϕ 6mm with fitting	
Power supply & Power consumption	100VAC/115VAC, 50/60Hz, 20VA	
Dimensions (in.) & weight (lb.)	Approx106(W) \times 78(H) \times 141(D),(in.) Approx 5(lb.)	

External drawing



LCD display (For example)



(Measurement)



(Alarm)



(Display of measurement value)



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RIKEN

PPB OR PPM DIGITAL DISPLAY!! HIGH SENSITIVITY TOXIC GAS MONITOR

MODEL FP-260

ONE TOUCH CASSETTE MODEL

Features

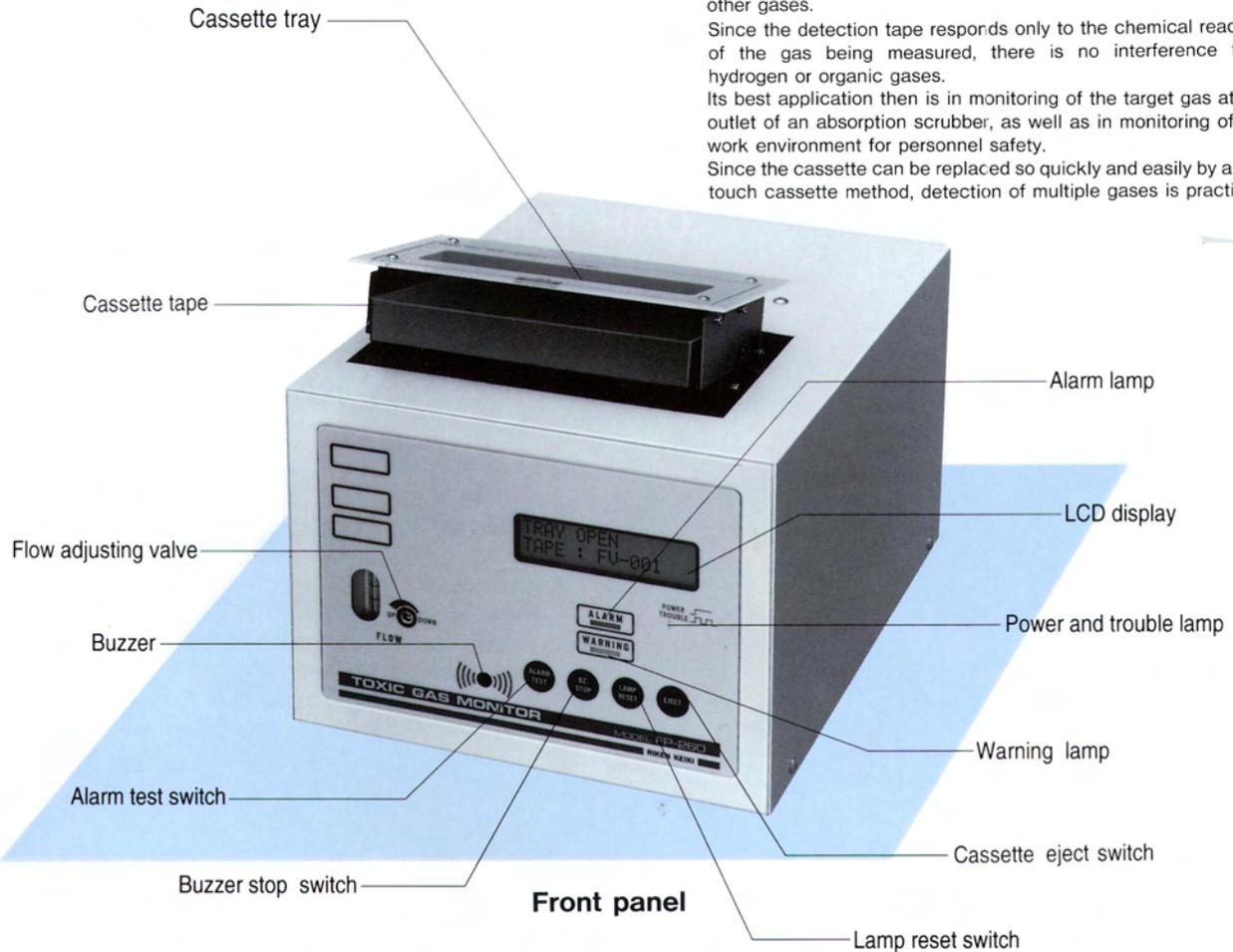
- Ideal for monitoring clean room in the semi-conductor industry.
- Ideal for low gas concentration (PPB detection).
- Interference-free detection.
- Easy to replace cassette tape with a plug-in cassette.
- Cassette tape remainder display included.



RIKEN KEIKI

MODEL FP-260

Part Designation



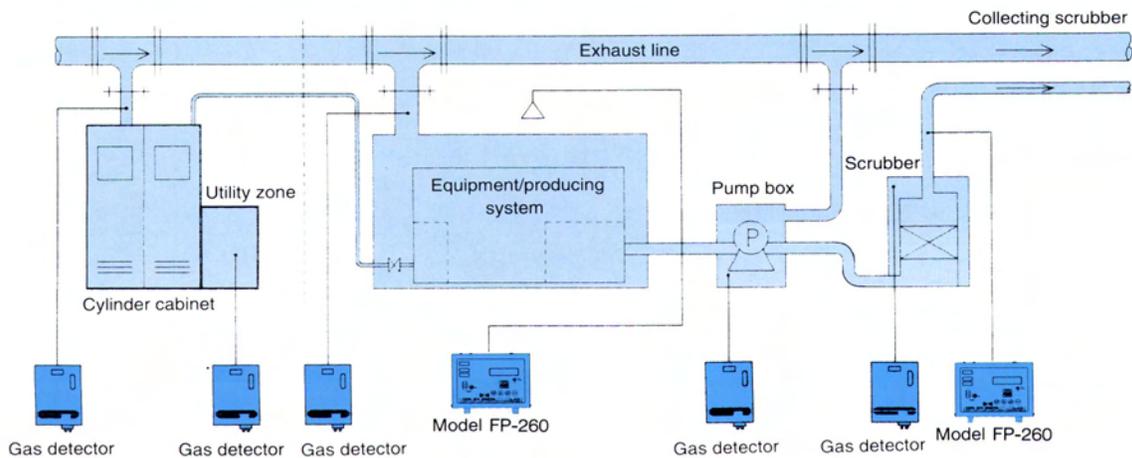
The FP-260 is a highly sensitive toxic gas monitor using a gas detection cassette tape which is almost free of interference from other gases.

Since the detection tape responds only to the chemical reaction of the gas being measured, there is no interference from hydrogen or organic gases.

Its best application then is in monitoring of the target gas at the outlet of an absorption scrubber, as well as in monitoring of the work environment for personnel safety.

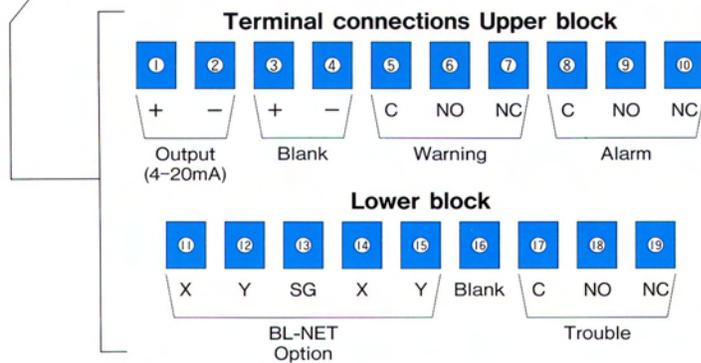
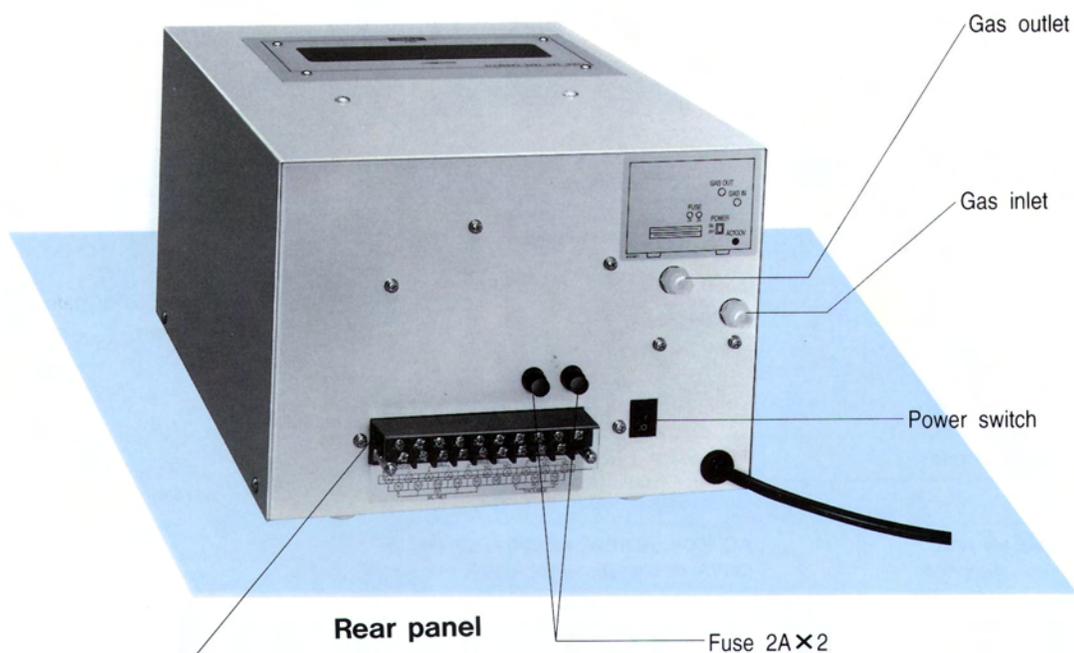
Since the cassette can be replaced so quickly and easily by a one touch cassette method, detection of multiple gases is practical.

Detection area/point (Example)



Detectable gases and detection range

Detectable gas	TLV value	Detection range	Resolution
Phosphine (PH ₃)	300 ppb	0~900 ppb	5
Silane (SiH ₄)	5 ppm	0~15 ppm	0.25
Diborane (B ₂ H ₆)	100 ppb	0~300 ppb	5
Arsine (AsH ₃)	50 ppb	0~150 ppb	1
Disilane (Si ₂ H ₆)	5 ppm	0~10 ppm	0.1
Hydrogen sulfide (H ₂ S)	10 ppm	0~100 ppb	1
Phosgene (COCl ₂)	100 ppb	0~300 ppb	2
Chlorine (Cl ₂)	0.5 ppm	0~100 ppb	1
Hydrogen selenide (H ₂ Se)	50 ppb	0~300 ppb	2



Specifications

Type	Desk top type, "Transportable"	
Detection principle	Photoelectric photometry method using paper tape cassette	
Detection tape	Cassette type, in VHS style quick change cassette.	
Detectable gases	Toxic gases (Please refer to the front page)	
Measuring range	Please refer to the front page	
Accuracy	Within ($\pm 20\%$ of indication value+1 digit) at constant conditions	
Operating time for cassette tape	One month (with no alarm) <ul style="list-style-type: none"> • Tape remainder display • Alarm display at tape end 	
Display	Digital LCD	
Alarm function	Alarm preset value	Warning : 1/6 of full scale Alarm : 1/3 of full scale
	Display	Lamp (warning-yellow, alarm-red) and buzzer
	Output	Latching (standard) or non latching (option) <ul style="list-style-type: none"> • Dry contact 1A (Warning) latching AC 125V, 0.5A • Dry contact 1A (Alarm) latching AC 125V, 0.5A
	Response time	Within 60 seconds when exposed to gas concentration of 1.6 times alarm level.
Self-diagnosis (Trouble alarm)	Contents	Sensor trouble, Flow fail, Warning of tape end, Tape exchange or tape damage, System trouble.
	Display	Lamp and LCD message.
	Output	"C" contact (No voltage, self-diagnosis) rating : AC 125V, 0.5A
Output signal (Analog)	4-20mA, Max load resistance 300 Ω (standard) or Multiplex transmission (Option)	
Operating temperature & humidity	5°C~35°C (41°F~95°F) 30%~90% RH	
Sampling flow rate	Approx 1.0 l/min.	
Gas inlet	Outer ϕ 6mm teflon tube with fitting	
Power supply and Power consumption	AC 100V, AC115V, AC220V, 50/60 Hz (35VA at Measurement, 60VA at Feeding Tape)	
Dimensions & weight	Approx 275(W) \times 220(H) \times 370(D) mm, Approx 12 kgs	
Standard accessories	Dust filter : 1 pce, Fuse (2A) : 1 pce, Gas detection cassette tape : 1 roll	

*Specifications subject to change without notice.



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RIKEN

BUILT IN SPECIAL PYROLYZER HIGH SENSITIVITY C₅F₈ GAS MONITOR

MODEL FP-270AGZS

〈Patent Pending〉

Measurement for C₅F₈ (Octafluorocyclopentene)



Gas detection tape cassette

Features

- Ideal for monitoring semiconductor fab clean rooms
- Ideal for low gas concentration
- Interference-free detection against Fluorinert and Galden
- Easy to replace cassette tape with a plug-in cassette
- Cassette tape remainder display included



RIKEN KEIKI

High sensitivity C₅F₈ gas monitor ideal for low c

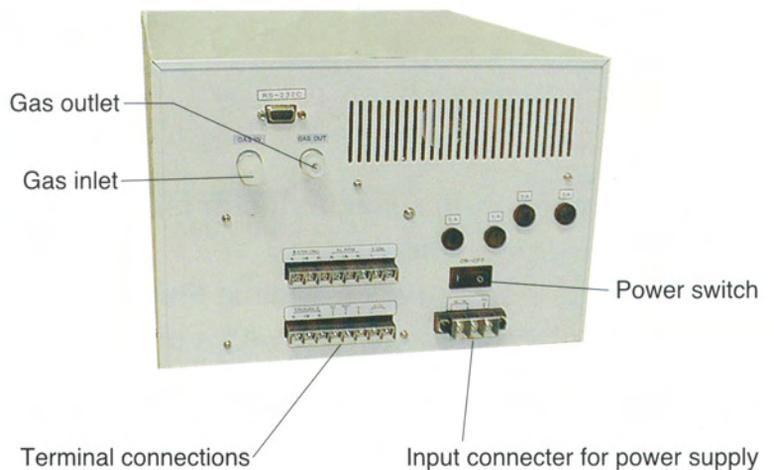
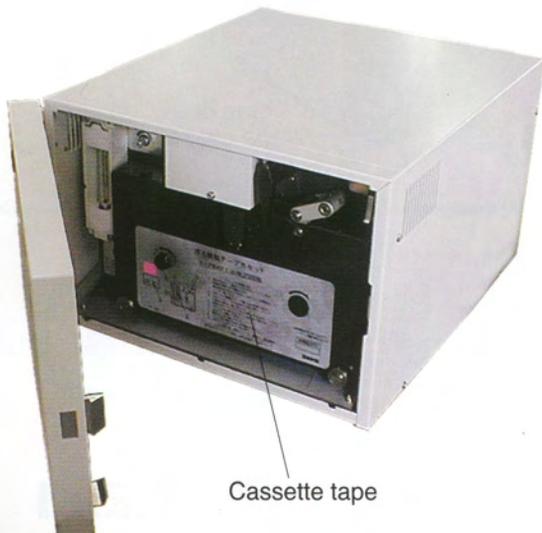
Description

This model is a highly sensitive Octafluorocyclopentene (C₅F₈) gas monitor which uses a special technique for detecting C₅F₈. C₅F₈ can be detected with built in special pyrolyzer. The gas stream is pyrolyzed with an internal heater to break down the C₅F₈ into more readily detectable compounds.

Then, the resulting compounds cause a chemical reaction on a colorimetric tape, and the intensity of the chemical reaction is analyzed and correlated to a specific ppm level of C₅F₈ present in the sample. The detection tape is in a handy cassette which is easily removed for periodic replacement.

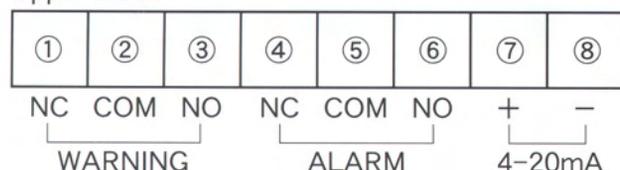
The model FP-270AGZS is a highly sensitive C₅F₈ monitor using a gas detection cassette tape which is almost free of interference from other gases. As the detection tape responds by a chemical reaction with the gas being measured, there is no interference from Fluorinert and Galden. Its best application then is in monitoring of C₅F₈ at the work environment for personnel safety.

Part Designation

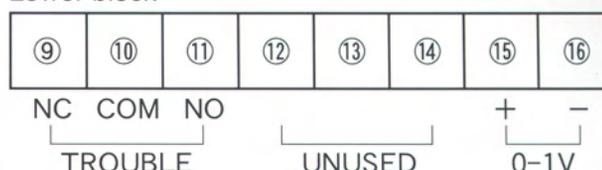


Terminal connections

Upper block



Lower block



Specifications

Model name		FP-270AGZS
Detection principle		Special pyrolyzer + photoelectric photometry method
Detection tape		Cassette tape style
Measuring gas		C ₅ F ₈ (Octafluorocyclopentene)
Measuring range		0-5.0 ppm
Sample flowrate		Approx 1.0L/min
Operating time for cassette tape		1 month (under gas free condition), with tape remainder display and caution display for tape end.
Alarm operation	Alarm value	Warning (1st alarm)2.0ppm Alarm (2nd alarm).....4.0ppm
	Indication	Lamp (Warning : Yellow, Alarm : Red) and buzzer
	Output	Latching alarm contact Non-energized contact Non-voltage C contact, 125VAC, 0.5A : Load resistance
	Alarm accuracy	Within $\pm 30\% + 1$ digit of alarm setting value at constant condition
Initial clear		Approx. 25 seconds after turning on the power
Self-diagnosis	Contents	* Sensor failure, * Flow failure, * Tape cut, * System trouble, * Tape cassette replacement, * Lever set failure
	Display	* LCD message, * Lamp, * Buzzer
	Output	* Non-latching contact * Non-energized contact * Non-voltage C contact, 125VAC, 0.5A : Load resistance
Output signal		* 4-20mA : Not isolated, Max. load resistance : 300 Ω 0-1V : Not isolated, * RS-232C interface (option)
Operating temperature & humidity		10~35°C 30~60%RH (Non-condensing)
Gas inlet		Outer diameter : 6mm ϕ , with fitting
Power source		100VAC, 110VAC, 115VAC, 220VAC (80VA)
Outer dimensions		Approx. 300 (W) \times 200 (H) \times 370 (D) mm
Weight		Approx 12kg
Standard accessories		Gas detection cassette tape, Check sheet, Dust filter, Fuse

Specifications subject to change without notice

Detectable gases and detection range with model FP-270 series

FP-270

Detection gas/Chemical formula	TLV value	Range	Alarm	Cassette tape
Ammonia (NH ₃)	25ppm	0-1.000ppm	0.300ppm	FT-009
		0-6.0ppm	2.0ppm	FT-010
Hydrogen chloride (HCl)	5ppm	0-1000ppb	350ppb	FT-004
		0-5.0ppm	2.0ppm	FT-005
Hydrogen fluoride (HF)	3ppm	0-9.0ppm	3.0ppm	FT-006
		0-1000ppb	350ppb	FT-006
Acetic acid (CH ₃ COOH)	10ppm	0-10.00ppm	3.50ppb	FT-006
Hydrogen bromide (HBr)	3ppm	0-3.00ppm	1.00ppm	FT-005
Chlorine tri-fluoride (ClF ₃)	100ppb	0-500ppb	100ppb	FT-006
Hydrazine (N ₂ H ₄)	100ppb	0-400ppb	200ppb	FT-010
TMA (C ₃ H ₉ N)		0-200ppb	100ppb	FT-009
		0-300ppb	150ppb	FT-009

FP-270AGZ

Detection gas/Chemical formula	TLV value	Range	Alarm	Cassette tape
Tetrahydrofuran (THF)	200ppm	0-50ppm	50ppm	FT-006



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RIKEN

C2E-0311

*Environmental gas monitor for semiconductor fabs
and exhaust gas from manufacturing tools and scrubbers*

HIGH SENSITIVITY TOXIC GAS MONITOR

MODEL **FP-300**

Photoelectric photometry method
with detection tape

**The World
Smallest!**



Micro cassette
Approx. same size as 8mm video cassette



FEATURES

- Small and compact.
- Highly sensitive and ideal for low gas concentrations (ppb detection).
- Interference-free detection.
- Easy detection tape replacement with plug-in cassette.
- Tape remainder display and tape end warning alarm provided.



RIKEN KEIKI

Model FP-300

Detectable gases and detection range (For environment / For scrubber)

Detectable gas		TLV	Detection range	Resolution	1 st Alarm	2 nd Alarm	Tape No.
Ammonia	NH ₃	25ppm	0.5~4ppm	0.1ppm	1ppm	2ppm	FC-010
Arsine	AsH ₃	50ppb	0~150ppb	1ppb	50ppb	100ppb	FCL-001
Chlorine	Cl ₂	0.5ppm	★ 0~0.8ppm	0.01ppm	0.25ppm	0.5ppm	FCL-105
			0~1.5ppm				
Diborane	B ₂ H ₆	100ppb	0~300ppb	5ppb	50ppb	100ppb	FCL-002
Hydrogen chloride	HCl	5ppm	0.25~1ppm	0.025ppm	0.5ppm	0.75ppm	FC-004
			1.5~8ppm	0.1ppm	2.5ppm	5ppm	FC-005
Hydrogen fluoride	HF	3ppm	0~9ppm	0.1ppm	1.5ppm	3ppm	FC-006
Hydrogen sulfide	H ₂ S	10ppm	0~100pp	1ppb	17ppb	34ppb	FCL-001
			0~10ppm	0.05ppm	1ppm	2ppm	
Phosphine	PH ₃	300ppb	★ 0~500ppb	5ppb	150ppb	300ppb	FCL-001
			0~900ppb				
Silane	SiH ₄	5ppm	★ 0~8ppm	0.1ppm	2.5ppm	5ppm	FCL-002
			0~15ppm				

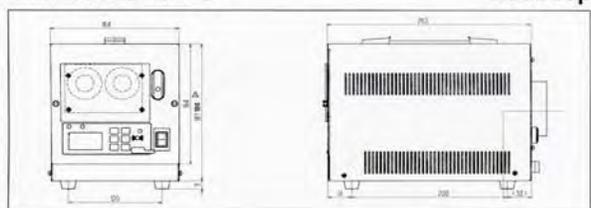
Note : Detection range marked by ★ is for scrubber use.
 • please specify name of gas and measuring range when ordering.

Specifications

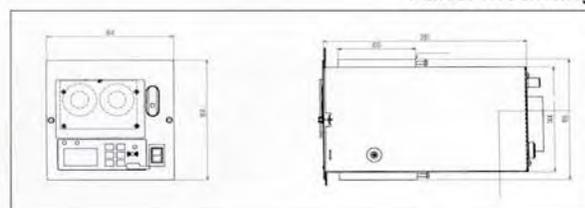
Model	FP-300
Detection principle	Photoelectric photometry method using tape cassette
Detection tape	Plug-in cassette
Detectable gas	See the table above.
Accuracy	Within ±20% +1 of indication
Operation time of the tape	1 month(with no alarm) Tape remainder display, Tape end warning
Alarm preset point	See the table above.
Alarm functions	Latching(standard)or self reset Lamp(Caution:Yellow,Warning:Red)and buzzer
Self-diagnosis	Sensor failure, Low flow, Tape failure, Tape end warning, Failure of tape setting, System error
External output signal	4-20mA(300Ω at maximum load resistance)
Operating temperature & humidity	5~35°C 30~90%RH(nom-condensing)
Power supply & power	24VDC ±10% for panel mounting 100VAC, 110VAC, 117VAC, 220VAC for desk top
Dimensions & weight	[Panel mounting] Approx. 164(W)×164(H)×261(D) Approx. 5.5kg
	[Desk top] Approx. 164(W)×198(H)×263(D) Approx. 6.5kg

• Specifications subject to change without notice.

Dimensions



Desk top



Panel mounting

Applications examples

- Detecting of uncaptured gas from scrubber.
- Environmental monitoring of Semiconductor fabs.



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INSTRUMENTS

HIGH SENSITIVITY FORMALDEHYDE GAS MONITOR

Gas Detection For Life

FP-301FL Model



Features

- Small and compact
- Highly sensitive and ideal for low gas concentrations
- Interference-free detection
- Easy detection tape replacement with plug in cassette
- Tape remainder display and tape end warning alarm provided
- PPM digital display
- Easily transportable
- 115 VAC powered
- Alarm relays
- 4-20mA output

Applications

- Furniture and woodworking
- Coating and varnishing
- Engineered wood products
- Medical / veterinary
- Painting & corrosion resistant finishes
- Carpet manufacture & storage
- Adhesives
- Heat treatment operations

RKI's paper tape monitors utilize highly sensitive colorimetric tapes to achieve interference free detection at low PPB and PPM levels of a wide variety of gases. The FP-301FL is equipped with an easily replaceable tape that is highly specific to Formaldehyde. This model is equipped with a digital display showing the type of gas and concentration in PPM. The FP-301FL will also display remaining tape life as well as an end of tape alarm.

The FP-301FL has audible and visual alarms, as well as alarm relay contacts and 4-20mA output. A unique "tape saver mode" extends tape life in applications where high background gas levels may be present.

FP-301FL Model

Model	FP-301FL
Detection principle	Photoelectric photometry method using tape cassette
Detection tape	Plug in cassette
Detection range	0 - 1.0 ppm
Accuracy	Within +/- 10% +1 of indication
Tape operation time	1 month with no alarm. Tape remainder display, tape end warning
Alarm functions	Latching comes standard or self reset. Lamp (Caution: Yellow, Warning: Red) and buzzer
Self diagnosis	Sensor failure, low flow, tape failure, Tape end warning, Failure of tape setting, system error
External output signal	4-20mA (300 Ω at maximum load resistance)
Operating temperature & humidity	5~35°C 30~90% RH (non condensing)
Power supply & power	24VDC +/- 10% for panel mounting 100 VAC, 110 VAC, 117 VAC, 220 VAC for desktop
Dimensions & weight	Panel mounting: Approx. 6.5(W) x 6.5(H) x 10.3(D) Approx. 14.33lb Desktop: Approx. 6.5(W) x 7.8(H) x 10.4(D) Approx. 12.125lb

Specifications subject to change without notice.



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Authorized Distributor:

Detectable Gases

Measurable Gases	Symbol	TLV/TWA	Range	Diffusion Detector	Sample Draw	Portable
Acetic Acid	CH ₃ COOH	1.5 PPM	30 PPM	–	GD-K34PF	–
Ammonia	NH ₃	25 PPM	75 PPM	GD-K8A-NH3	GD-K7D2 / GD-K77D	EAGLE / SC-01
Ammonia	NH ₃	25 PPM	1 PPM / 4 PPM	–	FP-270 / FP-300	–
Arsine	AsH ₃	0.05 PPM	0.2 PPM	–	GD-K7D2 / GD-K77D	EAGLE
Boron Trichloride	BCl ₃	HCI C 5 PPM	15 PPM	GD-K8A-BCI3	GD-K7D2 / GD-K77D	EAGLE
Boron Trifluoride	BF ₃	HF C 3 PPM	9 PPM	–	GD-K7D2 / GD-K77D	EAGLE
Bromine	Br ₂	0.1 PPM	1 PPM	GD-K8A-BR2	GD-K7D2 / GD-K77D	EAGLE
Butane	C ₄ H ₁₀	LEL = 1.9%	100% LEL	S-Series / GD-A8 / 61-1000RK / PS2	35-3000RK / GD-D8	GP-01 / EAGLE / GX-2001 / GX-2003 / GX-94 / GX-82A / GX-86A
Carbon Dioxide	CO ₂	5,000 PPM	2,000 PPM	RI-215A	RI-215D	–
Carbon Dioxide	CO ₂	5,000 PPM	5,000 PPM	RI-215A	RI-215D	EAGLE
Carbon Dioxide	CO ₂	5,000 PPM	10,000 PPM	RI-215A	RI-215D	EAGLE
Carbon Dioxide	CO ₂	5,000 PPM	5%, 20%, 60%	–	–	EAGLE
Carbon Monoxide	CO	25 PPM	150 PPM	GD-K8A-CO	GD-K7D2 / GD-K77D	–
Carbon Monoxide	CO	25 PPM	300 PPM	M2 / S-Series / M-Series	35-3000RK-CO	–
Carbon Monoxide	CO	25 PPM	500 PPM	–	–	GasWatch 2 / CO-01 / EAGLE / GX-2001 / GX-2003 / GX-94 / CO-94 / GX-82A / GX-86A
Chlorine	Cl ₂	0.5 PPM	3 PPM	GD-K8A-CL2	GD-K7D2 / GD-K77D	EAGLE / SC-01
Chlorine Trifluoride	ClF ₃	0.1 PPM	1 PPM	–	GD-K7D2 / GD-K77D	EAGLE
Combustibles LEL	LEL	–	100% LEL	M2 / S-Series / GD-A8 / 61-1000RK / PS2	35-3000RKA-MOS / GD-D8V	GP-01 / EAGLE / GX-2001 / GX-2003 / GX-94 / GX-82A / GX-86A
Combustibles PPM	PPM	–	500 PPM	S-Series / GD-A8V / PS2	–	EAGLE
Diborane	B ₂ H ₆	0.1 PPM	0.3 PPM	GD-K8A-B2H6	GD-K7D2 / GD-K77D	EAGLE
Dichlorosilane	DCS	HCI 5 PPM	15 PPM	GD-K8A-DCS	GD-K7D2 / GD-K77D	EAGLE
Disilane	Si ₂ H ₆	5 PPM	15 PPM	GD-K8A-SI2H6	GD-K7D2 / GD-K77D	EAGLE
Fluorine	F ₂	1 PPM	3 PPM	–	GD-K7D2 / GD-K77D	EAGLE
Formaldehyde	HCHO	C 0.3 PPM	1 PPM	–	FP-301	FP-30 / FP-40
Germane	GeH ₄	0.2 PPM	0.8 PPM	–	GD-K7D2 / GD-K77D	–
Halocarbons	HCFC	Various	0 ~ 5,000 (typ)	–	RI-257	RI-413A
Hexane	C ₆ H ₁₄	–	500 PPM	S-Series / GD-A8V / PS2	35-3000RKA-MOS	EAGLE
Hexane	C ₆ H ₁₄	LEL = 1.1%	100% LEL	S-Series / GD-A8 / 61-1000RK / PS2	35-3000RK / GD-D8	GP-01 / EAGLE / GX-2001 / GX-2003 / GX-94 / GX-82A / GX-86A
Hydrazine	N ₂ H ₄	0.1 PPM	4 PPM	–	FP-270	–
Hydrocarbon LEL	LEL	–	100% LEL	M2 / S-Series / GD-A8 / 61-1000RK / PS2	35-3000RK-LEL / GD-D8	GP-01 / EAGLE / RI-415 / RX-415 / GX-2001 / GX-2003 / GX-94 / GX-82A / GX-86A
Hydrocarbon PPM	PPM	–	500% LEL	S-Series / GD-A8V / PS2	35-3000RKA-MOS / GD-D8V	EAGLE
Hydrogen LEL	H ₂	LEL = 4%	100% LEL	S-Series / GD-A8 / H2 Specific / 61-1000RK	35-3000RKA-H2 / GD-D8	GP-01 / EAGLE / GX-2001 / GX-2003 / GX-94 / GX-82A / GX-86A
Hydrogen PPM	H ₂	–	2,000 PPM	H2 Specific / GD-A8V-H2 / S-Series	GD-D8V-H2	EAGLE
Hydrogen Bromide	HBr	C 3 PPM	9 PPM	GD-K8A-HBR	GD-K7D2 / GD-K77D	EAGLE
Hydrogen Chloride	HCl	C 5 PPM	15 PPM	GD-K8A-HCL	GD-K7D2 / GD-K77D	EAGLE
Hydrogen Cyanide	HCN	STEL C 4.7 PPM	30 PPM	GD-K8A-HCN	GD-K7D2 / GD-K77D	EAGLE
Hydrogen Fluoride	HF	C 3 PPM	9 PPM	–	GD-K7D2 / GD-K77D	EAGLE
Hydrogen Iodide	HI	–	5 PPM	–	GD-K7D2H / GD-K77DH	EAGLE
Hydrogen Sulfide	H ₂ S	10 PPM	1 PPM	–	GD-K7D2 / GD-K77D	EAGLE
Hydrogen Sulfide	H ₂ S	10 PPM	30 PPM	GD-K8A	GD-K7D2 / GD-K77D	EAGLE
Hydrogen Sulfide	H ₂ S	10 PPM	100 PPM	M2 / S-Series / M-Series	35-3000RK-H2S / RKA-H2S	GasWatch 2 / HS-01 / EAGLE / GX-2001 / GX-2003 / GX-94 / HS-94 / GX-82A / GX-86A
Iodine	I ₂	STEL C 0.1 PPM	1 PPM	–	GD-K7D2 / GD-K77D	EAGLE
Isopropyl Alcohol (IPA)	CH ₃ CHOHCH ₃	400 PPM	2,000 PPM	GD-A8V	GD-D8V	EAGLE
Methane	CH ₄	LEL = 5%	100% LEL	S-Series / GD-A8 / 61-1000RK / PS2	35-3000RK / GD-D8	GP-01 / EAGLE / RI-415 / RX-415 / GX-2001 / GX-2003 / GX-94 / GX-82A / GX-86A
Nitric Acid	HNO ₃	2 PPM	20 PPM	–	GD-K34PF	–
Nitric Oxide	NO	25 PPM	100 PPM	GD-K8A-NO	GD-K7D2 / GD-K77D	EAGLE
Nitrogen Dioxide	NO ₂	3 PPM	15 PPM	GD-K8A-NO2	GD-K7D2 / GD-K77D	EAGLE
Nitrogen Tetraoxide	N ₂ O ₄	NO2 3 PPM	15 PPM	–	GD-K7D2 / GD-K77D	EAGLE
Nitrogen Trifluoride	NF ₃	10 PPM	30 PPM	–	GD-K8DG / GD-K77DG	–
Octafluorocyclopentene	C ₅ F ₈	–	5 PPM	–	FP-270	–
Oxygen	O ₂	–	25% / 40%	M2 / S-Series / 65-2502RK	35-3000RK-OXY	GasWatch 2 / OX-01 / EAGLE / RX-415 / GX-2001 / GX-2003 / GX-94 / OX-94 / GX-82A / GX-86A
Ozone	O ₃	0.1 PPM	1 PPM	GD-K8A-O3	GD-K7D2 / GD-K77D	EAGLE
Pentane	C ₅ H ₁₂	LEL = 1.5%	100% LEL	S-Series / GD-A8 / 61-1000RK / PS2	35-3000RK / GD-D8	GP-01 / EAGLE / GX-2001 / GX-2003 / GX-94 / GX-82A / GX-86A
Perfluorobutadiene	C ₄ F ₆	–	5 PPM	–	FP-270	–
Phosphine	PH ₃	0.3 PPM	1 PPM	GD-K8A-PH3	GD-K7D2 / GD-K77D	EAGLE
Propane	C ₃ H ₈	LEL = 2.1%	100% LEL	S-Series / GD-A8 / 61-1000RK	35-3000RK / GD-D8	GP-01 / EAGLE / GX-2001 / GX-2003 / GX-94 / GX-82A / GX-86A
Silane	SiH ₄	5 PPM	15 PPM	GD-K8A-SIH4	GD-K7D2 / GD-K77D	EAGLE
Silicon Tetrachloride	SiCl ₄	HCI C 5 PPM	15 PPM	GD-K8A-SICl4	GD-K7D2 / GD-K77D	EAGLE
Silicon Tetrafluoride	SiF ₄	HF C 3 PPM	9 PPM	–	GD-K7D2 / GD-K77D	EAGLE
Sulfur Dioxide	SO ₂	2 PPM	6/10/15/30 PPM	GD-K8A-SO2	GD-K7D2 / GD-K77D	EAGLE / SC-01
Sulfur Tetrafluoride	SF ₄	HF C 3 PPM	9 PPM	–	GD-K7D2 / GD-K77D	EAGLE
Tetraethyl Orthosilicate	TEOS	10 PPM	15 PPM	–	GD-S77DG-TEOS / GD-S8DG-TEOS	–
Trichlorosilane	TCS	HCI C 5 PPM	15 PPM	–	GD-K7D2 / GD-K77D / GD-S8DG-TCS	EAGLE
Trimethoxy Phosphate	TMP	2 PPM	15 PPM	–	GD-S77DG / GD-S8DG-TMP	–
Trimethoxyboron	TMB	–	500 PPM	–	GD-S77DG / GD-S8DG - TMB	–
Tungsten Hexafluoride	WF ₆	HF C 3 PPM	9 PPM	–	GD-K7D2 / GD-K77D	EAGLE
1 1 1-Trichloroethane	C ₂ H ₃ Cl ₃	350 PPM	0 ~ 2,000 PPM	GD-A8V	GD-D8V	–

