



RIKEN KEIKI

Portable multi gas detector Model: GX-6000



===== FEATURES =====

Multi gas detection

1 to 6 gases

Smart sensor

PID, EC, IR, OS

Small & light

World smallest & lightest

Interchangeable power source

Li-ion / Alkaline

Wide operation temp.

-20 to 50°C

High water & dust proof level

IP67

Various approvals

ATEX / IECEx / CE

Docking station

SDM-6000

New functions

Full dot LCD / Multi language / Man down /
Panic alarm / LCD inversion / LED Flashlight

Application

- ⊙ Personal monitoring
- ⊙ Refineries/Petrochemical/
wastewater treatment
- ⊙ Confined space
- ⊙ Utilities
- ⊙ Chemical plants
- ⊙ Hazardous material
- ⊙ Water
- ⊙ Fire service
- ⊙ Mining



*Smart sensors for PID, Electro Chemical
are newly released !! (IR, Galvanic cell are
coming soon)*

Each sensor specification

| | | | | |
|---------------------------------|--|--|--|--|
| Gas to be detected | Combustible gas (HC/CH4) <%LEL> | Oxygen (O2) | Hydrogen sulfide (H2S) | Carbon monoxide (CO) |
| Detection principle | New ceramic | Galvanic cell type | Electrochemical type | Electrochemical type |
| Detection range <Service range> | 0 - 100%LEL | 0 - 25.0% <to 40.0 vol%> | 0 - 30.0 ppm <to 100.0 ppm> | 0 - 150 ppm <to 500 ppm> |
| Minimum resolution | 1%LEL | 0.1 vol% | 0.5 ppm | 1 ppm |
| Alarm setpoint | 10%LEL (AL1) 50%LEL (AL2) 100%LEL (OVER) | 19.5 vol% (AL1) 23.5 vol% (AL2) 40.0 vol% (OVER) | 5.0 ppm (AL1) 30.0 ppm (AL2) 10.0 ppm (TWA) 15.0 ppm (STEL) 100.0 ppm (OVER) | 25 ppm (AL1) 50 ppm (AL2) 25 ppm (TWA) 200 ppm (STEL) 500.0 ppm (OVER) |
| Gas to be detected | Volatile organic compound (VOC) <ppb> | Volatile organic compound (VOC) <ppm> | Sulfur dioxide (SO2) | Nitrogen dioxide (NO2) |
| Detection principle | Photoionization type | Photoionization type | Electrochemical type | Electrochemical type |
| Detection range | 50000 ppb | 6000 ppm | 0 - 6.00 ppm | 0 - 9.00 ppm |
| Minimum resolution | 1 ppb (0 - 5000 ppb) 10 ppb (5000 - 50000 ppb) | 0.1 ppm (0 - 600.0 ppm) 1 ppm (600 - 6000 ppm) | 0.05 ppm | 0.05 ppm |
| Alarm setpoint | 4300 ppb (AL1) 6000 ppb (AL2) 50000 ppb (OVER) | 400.0 ppm (AL1) 600.0 ppm (AL2) 42.0 ppm (TWA) 60.0 ppm (STEL) 6000 ppm (OVER) | 2.00 ppm (AL1) 5.00 ppm (AL2) 2.00 ppm (TWA) 5.00 ppm (STEL) 6.00 ppm (OVER) | 3.00 ppm (AL1) 6.00 ppm (AL2) 3.00 ppm (TWA) 9.00 ppm (OVER) |
| Gas to be detected | Hydrogen cyanide (HCN) | | | |
| Detection principle | Electrochemical type | | | |
| Detection range | 0 - 15.0 ppm | | | |
| Minimum resolution | 0.1 ppm | | | |
| Alarm setpoint | 5.0 ppm (AL1) 10.0 ppm (AL2) 4.7 ppm (STEL) 15.0 ppm (OVER) | | | |

Gas combination (1-6 gases) & Battery type

< Gas combination >

Standard 4 gas sensor



| No. | Target gas | Sensor | Code |
|-----|------------|------------|-------------|
| ① | CH4 or HC | NC-6264AZP | M or H or 0 |
| ② | O2 | OS-BM2 | 1 or 0 |
| ③ | H2S | ES-1827i | 1 or 0 |
| ④ | CO | ES-1821 | 1 or 0 |

Smart sensor

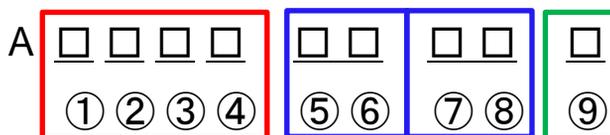


| | | | |
|----|-----------|----------|----|
| ⑤⑥ | VOC (ppb) | PIS-001 | P1 |
| | VOC (ppm) | PIS-002 | P2 |
| ⑦⑧ | SO2 | ESS-03DH | E1 |
| | NO2 | ESS-03DH | E2 |
| | HCN | ESS-03DH | E3 |
| | None | — | 00 |

< Battery type >

| No. | Battery type | Model | Code |
|-----|--------------|----------|------|
| ⑨ | Lithium-ion | BUL-6000 | L |
| | Dry alkaline | BUD-6000 | D |

Product code of GX-6000



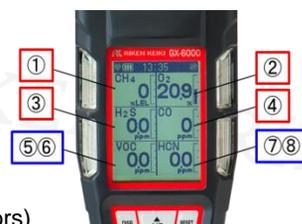
"A" is a fixed code.

Choose a combination of 1-6 gases and battery type from the tables left.

① to ④: Standard 4 gas sensor (0 to 4 sensors)

⑤⑥, ⑦⑧: Smart sensor (0 to 2 sensors)

⑨: Battery type



Ex.) When "M110P1E1L" is indicated, the gases to be detected are "CH4 <%LEL>, O2, H2S, VOC (ppb), SO2", and the battery type is Lithium-ion.

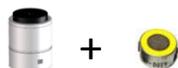
NOTE:

Interference effects on indicated values are seen on some combination. For more details, please contact RIKEN KEIKI.

Special attention gas combinations

< PID + LEL (Catalytic combustion) >

Some gases detected by PID sensor may poison or inhibit catalytic elements in the LEL (Catalytic combustion) sensor. This may result in reducing the LEL sensor sensitivity against target gases.



< PID + O2 (Galvanic cell) >

Some gases detected by PID sensor may poison Galvanic cell sensor. This may result in reducing the O2 sensor sensitivity against target gas.



< Electrochemical + Electrochemical >

Some sensors have negative and positive interference effects against a certain kind of gases. Table below shows response examples. If the interference gases exist in the same measuring environment, indicated values on GX-6000 can be unreliable.



Positive side interference gas combination

| | |
|---|-----------|
| 1 | SO2 / CO |
| 2 | HCN / CO |
| 3 | HCN / H2S |
| 4 | HCN / SO2 |
| 5 | CO/ H2S |

Negative side interference gas combination

| | |
|---|-----------|
| 1 | SO2 / NO2 |
| 2 | NO2 / CO |
| 3 | NO2/ SO2 |
| 4 | HCN / NO2 |
| 5 | H2S / NO2 |

NOTE: For more details, please contact RIKEN KEIKI.

Common specification

| | |
|-----------------------------------|--|
| Concentration display | Digital LCD (full-dot display, 160 x 128 dots) |
| Detection method | Pump suction type |
| Flow rate | 0.45 L/min or more (Open flow rate) |
| Displays | Clock display, battery level display, operating state display and flow check display |
| Display language | English, Japanese, German, Russian, Korean |
| Buzzer sound volume | 95 dB (A) or higher (30 cm) |
| Gas alarm display | Lamp blinking, continuous modulating buzzer sounding, gas concentration and alarm detail display blinking and vibration |
| Gas alarm pattern | Self-latching |
| Fault alarm/self diagnosis | System abnormalities, sensor abnormalities, battery voltage drop, calibration failure, and low flow rate |
| Fault alarm display | Lamp blinking, intermittent buzzer sounding, and detail display |
| Fault alarm pattern | Self-latching |
| Panic alarm display | Preliminary alarm: Lamp blinking, intermittent buzzer sounding Main alarm: Lamp blinking, continuous modulating buzzer sounding |
| Panic alarm pattern | Self-latching |
| Man-down alarm display (*) | Preliminary alarm: Lamp blinking, intermittent buzzer sounding Main alarm: Lamp blinking, continuous modulating buzzer sounding |
| Man-down alarm pattern (*) | Non latching (auto-reset) |
| Transmission specification | IrDA (for data logger) |
| Power supply | Standard: Dedicated lithium ion battery unit [BUL-6000] Option: Dedicated dry battery unit <AA alkaline dry battery x 3> [BUD-6000] |
| Continuous operating time | BUL-6000: About 14 hours (25°C, no alarm and no lighting) BUD-6000: About 8 hours (25°C, no alarm and no lighting) |
| Operating temperatures | -20 - +50°C |
| Operating humidities | Below 95% RH (Non-condensing) |
| Structure | Drip-proof and dust-proof performances (compliant to IP67 level) (tubes excluded) |
| Explosion-proof structure | Intrinsically safe explosion-proof structure |
| Explosion-proof class | Ex ia IIC T4 Ga (ATEX/IECEX) |
| External dimensions | Approx. 70 (W) x 201 (H) x 54 (D) mm (projection portions excluded) |
| Weight | Approx. 500 g (When BUL-6000 is used)/Approx. 450 g (When BUD-6000 is used) |

* Normally the man-down alarm function is set to OFF and unavailable. To use this function, please contact RIKEN KEIKI.

Accessories

| | | | | | | |
|----------------------|--|---|---|--|---|--|
| Standard accessories | BUL-6000 (Li-ion battery unit), Charger  | Rubber boot  | Taper nozzle  | LCD protect film  | Hand strap  | Belt clip  |
| | Optional accessories | Gas sampling probe Gas sampling hose (0.75m / 5m / 10m / 20m / 30m)  | BUD-6000 (Alkaline battery unit), AA battery x 3  | Data logger program  | PID list setting program  | SDM-6000  |

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