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℃

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

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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 ⑦⑧	VOC (ppb)	PIS-001	P1
	VOC (ppm)	PIS-002	P2
	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

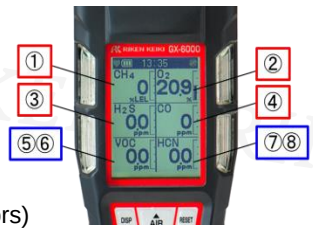
A □ □ □ □ □ □ □ □ □

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

"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



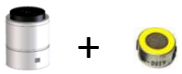
Ex.) When "M110P1E1L" is indicated, the gases to be detected are "CH4 <%LEL>, O2, H2S, VOC (ppb), SO2", and the battery type is Lithium-ion.

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 (25ºC, no alarm and no lighting) BUD-6000: About 8 hours (25ºC, no alarm and no lighting)
Operating temperatures	-20 - +50ºC
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