

# Gas Sampling Attachment

*When gas measuring inside cargo tank*

R K INSTRUMENTS (S) PTE LTD

1/12/2015

[EDITION 4, VOLUME 8]

**Our Model TGS-1 is compatible with other makers or specifications!**

As we know that toxic gases from hydrocarbons are **harmful** to the human body and it is present in most crude oil tankers. For all we know, it may be **endangering** to our lives. Therefore, it is important that we take the first precaution.

As such, it has come to a point where the ruling and safety is of a main concern! Therefore, measuring gas through open tank space is not acceptable.

The **IMO 1978-resolution A.446** states that “*portable instruments for measuring oxygen and flammable vapor concentration shall be provided. In addition, suitable arrangement shall be made on each cargo tank such that the condition of the tank atmosphere can be determined using these portable instruments.*” IMO also requires the minimizing of VOC exposure against crews. By these reasons, major inspectors strongly rest to carry Gas Sampling attachment.

**TGS-1**



In conjunction with this, **R K Instruments** takes this into consideration and manufactured the **Gas Sampling Attachment, TGS-1** for the usage for the chemical and oil tanker application in closed tank structure.

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# Gas Sampling Attachment TGS -1



Our TGS-1 enables interchangeable adaptors for the different types of valves!

## SPECIFICATIONS

Model	TGS-1
Connection	1" / 2" deck valve
Material	SUS 316 & BC
Hose	Anti-static 30m sampling hose with Riken quick coupling
Certifications / Approvals / Regulations	SOLAS
Accessories (Complete in an aluminum carrying case)	<ul style="list-style-type: none"><li>i. Measuring probe with storage tube</li><li>ii. 30m sampling hose</li><li>iii. 3-way valve</li><li>iv. Spiral hose (1m) with quick coupling</li><li>v. Thread adaptor</li></ul>



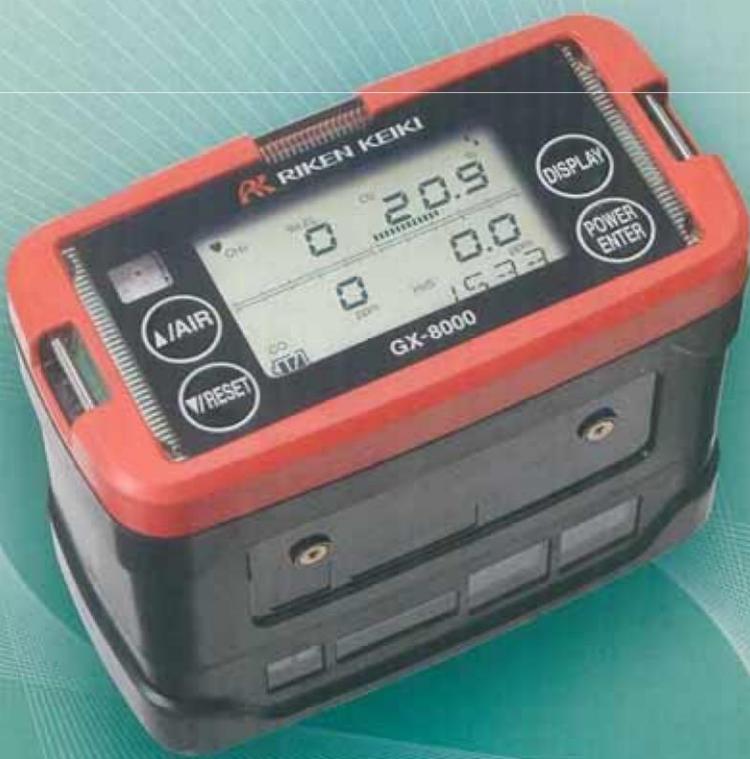
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*The Gas Sampling Attachment, TGS-1, can be easily attached with Riken's portable gas detectors. The advantage of buying from us is that we do not require information such as the Hull No., or the deck valve in order to determine the right adaptor to use. With the TGS-1, it can be used either the 1" or 2" adaptor depending on the types of deck valve. It does not require much effort to change the adaptor. Additionally, we manufactured it in SUS316 grade for greater resistance to corrosion! With the TGS-1, measuring the tankscope makes it so much easier and hassle-free!!*



# PORTABLE MULTI GAS MONITOR

## MODEL GX-8000



### ◆ Application

- Confined space
- Refineries/Petrochemical/Chemical plants
- Oil tanker/Gas carrier/Bulk carrier
- Chemical tanker
- Water/Wastewater treatment
- Fire services
- Telecommunication services
- Power plant
- Gas plant/Gas supplier services
- Utilities
- Coating field
- Fuel cell facilities

### ◆ Features

- Real-time detection of max. 5 ranges Combustibles 100vol% /100%LEL, O<sub>2</sub>, H<sub>2</sub>S & CO
- Large simultaneous display with auto back lighting
- Strong sample drawing capability
- Loud alarm buzzer with 95dB
- 3 bright LED alarm windows
- ATEX Exia II CT4 approved
- Water and dust resistant IP67
- Lithium-ion rechargeable battery
- Compact and light weight
- Ergonomic design with waist strap for hands free operation
- Datalogging standard



ISO 9001:2000  
IEC 62366-1:2014  
IEC 62366-2-1:2014

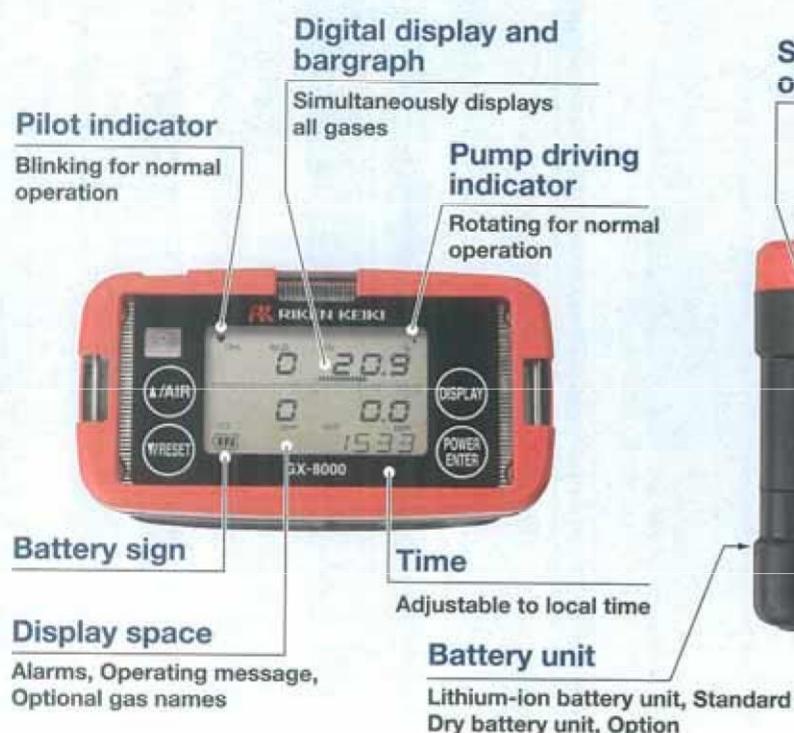
**RIKEN KEIKI**

# COMPONENT DESIGNATIONS

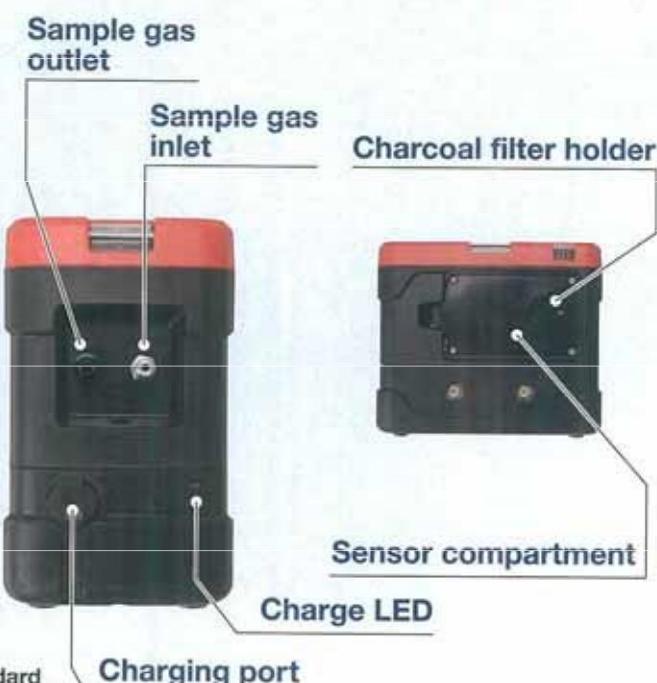
The GX-8000 sets the new industry standard for rugged, reliable portable gas detection. It's tough, water proof design utilized features based on years of gas detection design experience, to assure that the instrument will operate properly to protect workers and property in all kinds of harsh gas detection applications.



## Display screen example



## Side view



## Rear view

## Direct readout combustibles

Standard		LEL	Detection range
iso-Butane	i-C <sub>4</sub> H <sub>10</sub>	1.8vol%	0-100%LEL/0-100vol%
Methane	CH <sub>4</sub>	5.0vol%	0-100%LEL/0-100vol%
Hydrogen	H <sub>2</sub>	4.0vol%	0-100%LEL/0-100vol%

Option (factory setting)		LEL	Detection range
Acetylene	C <sub>2</sub> H <sub>2</sub>	1.5vol%	0-100%LEL
Methylalcohol	CH <sub>3</sub> OH	5.5vol%	0-100%LEL
MEK	CH <sub>3</sub> COC <sub>2</sub> H <sub>5</sub>	1.8vol%	0-100%LEL
n-Hexane	CH <sub>3</sub> (CH <sub>2</sub> ) <sub>4</sub> CH <sub>3</sub>	1.2vol%	0-100%LEL
Toluene	C <sub>6</sub> H <sub>5</sub> CH <sub>3</sub>	1.2vol%	0-100%LEL

LELvalues according to the directive by TIIS edition RIIS-TR-79-1 in 1979.  
TIIS : Technology Institution of Industrial Safety

## Data logger download via IrDA communication



## GX-8000 gas combinations available

		Combustibles 0-100vol%	Combustibles 0-100%LEL	O <sub>2</sub> 0-40.0%	H <sub>2</sub> S 0-100.0ppm	CO 0-500ppm
Four gases/ Five ranges	Type-A	●	●	●	●	●
Four gases	Type-B		●	●	●	●
Three gases	Type-C		●	●	●	
	Type-D		●	●		●
Two gases/ Three ranges	Type-E	●	●	●		
Two gases	Type-F		●	●		

Please specify gas combinations when ordering

# Specifications

# MODEL GX-8000

Target gas	Combustibles (CH <sub>4</sub> , i-C <sub>4</sub> H <sub>10</sub> , H <sub>2</sub> , others)		Oxygen (O <sub>2</sub> )	Hydrogen sulfide (H <sub>2</sub> S)	Carbon monoxide (CO)
<b>Detection principle</b>	Thermal conductivity	Catalytic combustion	Galvanic cell	Electrochemical	Electrochemical
<b>Detection range (Increments)</b>	0-100vol% (1vol%)	0-100%LEL (1%LEL)	0-40.0% (0.1%)	0-100.0ppm (0.5ppm)	0-500ppm (1ppm)
<b>Gas alarm</b>	N/A	1st : 10%LEL 2nd : 50%LEL	1st : 19.5% 2nd : 23.5%	1st : 10.0ppm 2nd : 30.0ppm TWA : 10.0ppm STEL : 15.0ppm	1st : 25ppm 2nd : 50ppm TWA : 25ppm STEL : 200ppm
<b>Types of alarm</b>	Gas alarm : Latching, 2 alarms Failure alarm : Flow failure, Sensor failure, Battery failure, Circuit failure, Calibration failure				
<b>Display of alarm</b>	LED : LED's flash Buzzer : Buzzer sounds alternating between a low and high pitch Visual indication : Indication value flashes. Alarm message displays and flashes.				
<b>Alarm sound</b>	More than 95dB (A) at 30cm				
<b>Display</b>	Digital LCD with auto backlight Digital display (7 segments) and digital bargraph (25 segments)				
<b>Sampling method</b>	Sample Draw, Minimum 0.75L/min				
<b>Power source</b>	Lithium-ion battery, Standard (3 hours for a full charge) AA Alkaline battery (3pcs), Option				
<b>Continuous operation</b>	Lithium-ion battery : more than 12 hours AA Alkaline battery : more than 6 hours				
<b>Operating temp &amp; humidity</b>	-20~+50°C, -4~+122°F below 95%RH (Non-condensing)				
<b>Dimensions &amp; Weight</b>	Approx. 154(W) x 81(H) x 127(D) mm, Approx. 1.1kg Approx. 6.1"(W) x 3.1"(H) x 4.9"(D), Approx. 2.4lb				
<b>Ingress proof rating</b>	Equivalent to IP67				
<b>Explosion proof</b>	Intrinsically safe Exia II CT4				
<b>Approvals</b>	IECEx, ATEX, TIIS MED, HK, CE mark, all approvals submitted and pending				
<b>Additional features</b>	Complying to IEC60079-29-1 Indication to show energizing (pilot indicator and pump driving indicator), Pump stop function, Bump test function, IrDA communication, Data logger, Password protection				

Specifications subject to change without notice

## Standard accessories

- AC powered charger  
(Input : AC100V-AC240V, 50/60Hz)  
(Output : DC12V, 1.25A)
- Gas sampling probe
- Gas sampling hose (Spiral 1m)
- Lithium-ion battery unit BUL-8000
- Neck/shoulder strap
- Instruction manual

## Optional accessories

- Dry battery unit BUD-8000
- Gas sampling hose 8m with float type sampling head
- Gas sampling hose 30m with plummet
- Filter tube
- Junction tube
- Diluter adapter (for bulk carrier application)
- Waist strap

- Sampling probe holder on the neck/shoulder strap
- Leather carrying case
- Storage box for marine use
- Carrying box
- Calibration gas set
- Flow control demand valve
- Datalogging software

★ Distributed by:

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