



RIKEN KEIKI

# OPTICAL GAS INDICATOR

## Model FI-8000

- **CE Marking (EMC)**
- **ATEX**
- **IECEX**
- **TIIS**



- **Max 8 measuring gas range available**
- **Intermittent measuring mode available**  
(For pump suction type only)
- **Ingress proof rating IP67**  
Suited for outdoor work.
- **Easy-to-read wide LCD display**
- **Intrinsically safe (ATEX Presafe 14 ATEX 5711)**  
Explosion proof class Exia IIC T4 Ga
- **2 way of sampling method**  
Pump suction type or Hand aspirating type



## History for Riken optical detectors

Analysis-Scientific heritage approved



Riken gas indicator model 3 (1930)



Riken gas indicator model 18 (1952)



FI-21 (2001)



FI-8000 (2015)

Digital display

Automatic analysis

IP67

Light weight

Data Logging

Easy operation

In early 1930, many of explosion accidents at oil tanker were occurred. To prevent these accidents, a gas detector based on optical interferometric method was developed and Riken Keiki was founded as this product manufacture. The gas detectors were used in a coal mine for safety use throughout the world.

Riken gas indicator model 3 has been distributed to Japanese life as an valuable instrument and approved as a heritage of analytical and scientific instruments by JAIMA and JSIA.

## Model FI-8000

You can select the pump suction type or hand aspirating type, and measuring gas in accordance with the requirements.

FI-8000 TYPE □-□□-□□

### Suction method

A : Hand-aspirating type  
P : Pump suction type

### Chamber length <sup>(※1)</sup>

05 : 5mm  
24 : 24mm  
48 : 48mm

### Detection gas <sup>(※2)</sup>

50 : Anesthetic gas  
52 : Fumigation gas  
99 : Customized

※1 It differs by measuring gas.  
Anesthetic and fumigation : No need to specify  
For customized spec, refer the 3rd page.

※2 Refer the last page for anesthetic gas and fumigation gas.  
See the 3rd page customized spec.

- ◆ Specify suction method for anesthetic gas spec.

FI-8000 TYPE □-24-50

- ◆ Specify suction method for fumigation spec.

FI-8000 TYPE □-48-52

- ◆ Specify suction method and chamber length for customized spec.

FI-8000 TYPE □-□-99

Measuring gas

1 set of FI-8000 can install maximum 8 kinds of measuring gas range under the same chamber length.

Measuring gas list

<Chamber length : 5mm>

Detection gas	Base gas	Range
Methyl bromide	Air	0~100vol%
Sulfur Hexafluoride	Air	0~100vol%
Sulfur Hexafluoride	Air	0~99.9%up
Sulfur Hexafluoride	N2	0~100vol%
Propane	Air	0~100vol%
Iso-butane	Air	0~100vol%
N-butane	Air	0~100vol%
Flon 22	Air	0~100vol%
Dimethyl Ether	Air	0~100vol%
Dimethyl Ether	N2	0~100vol%
Xenon	Air	0~100vol%
Ethylene	Air	0~100vol%
Chorine	Air	0~100vol%
Vinyl chloride	N2	0~100vol%

Detection gas	Base gas	Detection gas
Propane	Air	0~101.3 MJ/m <sup>3</sup> Gross 0°C
Butane	Air	0~134.2 MJ/m <sup>3</sup> Gross 0°C
Propane	Air	0~93.15 MJ/m <sup>3</sup> Net 0°C
Butane	Air	0~123.7 MJ/m <sup>3</sup> Net 0°C

<Chamber length : 24mm>

Detection gas	Base gas	Range
Halothane	O2	0~6vol%
Isoflurane	O2	0~8vol%
Sevoflurane	O2	0~10vol%
Desflurane	O2	0~20vol%
Halothane	Air	0~6vol%
Isoflurane	Air	0~8vol%
Sevoflurane	Air	0~10vol%
Desflurane	Air	0~20vol%
Enflurane	O2	0~10vol%
Enflurane	Air	0~10vol%

Detection gas	Base gas	Detection gas
Helium	Air	0~100vol%
Helium	N2	0~100vol%
Helium	Argon	0~100vol%
Hydrogen	Air	0~100vol%
Hydrogen	N2	0~100vol%
Heavy Hydrogen	Air	0~100vol%
Heavy Hydrogen	N2	0~100vol%
Carbon dioxide	Air	0~100vol%
Carbon dioxide	N2	0~100vol%
Carbon dioxide	Argon	0~100vol%
Neon	Air	0~100vol%
Methane	Air	0~100vol%
Methane	N2	0~100vol%
Nitrus Oxide	Air	0~100vol%
Ozone	O2	0~100vol%

Detection gas	Base gas	Range
LNG or LNG +LPG	—	25~50 MJ/m <sup>3</sup> Gross 0°C
LNG or LNG +LPG	—	22~45 MJ/m <sup>3</sup> Net 0°C

<Chamber length : 48mm>

Detection gas	Base gas	Range
Toluene	Air	0~100%LEL
MEK	Air	0~100%LEL
Ethyl acetate	Air	0~100%LEL
Xylene	Air	0~100%LEL
Iso-propyl alcohol	Air	0~100%LEL
M.E.K	Air	0~100%LEL
Methanol	Air	0~100%LEL
Propane	Air	0~100%LEL
Iso-butane	Air	0~100%LEL
Acetone	Air	0~100%LEL
Ethyl alcohol	Air	0~100%LEL
Methane	Air	0~100%LEL
Hydrogen	Air	0~100%LEL
Ethyl chloride	Air	0~100%LEL
Ethylene	Air	0~100%LEL
Styrene	Air	0~100%LEL
Ammonia	Air	0~100%LEL
Tetrahydroflane	Air	0~100%LEL
Dioxolane	Air	0~100%LEL
Methyl-isopropil-Keton	Air	0~100%LEL
Tetrafluoro-propane	Air	0~100%LEL
Butylacetate	Air	0~100%LEL

Detection gas	Base gas	Range
Methyl Bromide	Air	0~200g/m <sup>3</sup>
Methyl Iodine	Air	0~200g/m <sup>3</sup>
Sulfuryl Fluoride	Air	0~200g/m <sup>3</sup>
Methyl Bromide	Air	0~5vol%
Propylene oxide	Air	0~10vol%
Phosphine	Air	0~50g/m <sup>3</sup>
Hydrogen Cyanide	Air	0~200g/m <sup>3</sup>

Detection gas	Base gas	Range
Ammonia	N2	0~100vol%
Oxygen	N2	0~100vol%

Detection gas for anaesthetic









Detection gas for fumigation

## Specification

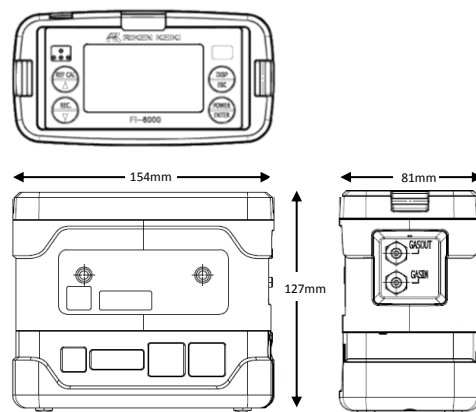
Model	FI-8000	
Measuring principle	Optical interferometric method	
Measuring gas	Refer to the 3 <sup>rd</sup> page.	
Indication accuracy	Within $\pm 3\%$ (at constant temperature)※	
Type	TYPE P-□□-□□	TYPE A-□□-□□
Sampling method	Pump suction type	Hand-aspirating type
Self-diagnosis function	Low battery, Low light, Low contrast, abnormal atmospheric pressure and abnormal temperature	
Display	LCD digital (7-segment value display + code + 20 segment word x 2 lines)	
Each display	Measuring gas, gas concentration, measuring unit and battery capacity reminder	
Power source	Alkaline battery pack (AA size battery x 3 pcs) (standard) Or, Lithium ion battery (optional)	
Ingress proof rating	IP67 equivalent	
Ambient humidity & temperature	Temperature : -20~50°C, Humidity : Below 95%RH (Non-condensing)	
Dimensions	Approx. 154 (W) × 127 (H) × 81 (D) mm	
Weight	Approx. 1.1kg (including alkaline batteries) Approx. 1.2kg (including lithium ion batteries)	
Explosion proof	TIIS / ATEX / IECEx	
Continuous operation	Above 12 hrs (for alkaline battery use) Above 18 hrs (for lithium ion battery use) (25°C with no back light on)	Above 16 hrs (for alkaline battery use) Above 24 hrs (for lithium ion battery use) (25°C with no back light on)
External output	IrDA (for data logging)	
Function	Data logging, atmospheric pressure correction, temp compensation	

※ Indication accuracy subject to the measuring gas.

## Accessories

	Common (Anaesthetic/fumigation/customized gas)			Anaesthetic	
Accessories	Gas sampling tube (1m) 	Shoulder strap 	Hand-aspirator (For TYPE A only) 	Absorption tube 	Tube Fix belt 
Optional	Lithium ion battery unit 	Datalogging software 	AC adaptor 		

## Appearance



## RIKEN KEIKI Co., Ltd.

2-7-6 Azusawa, Itabashi-ku, Tokyo 174-8744, Japan

Phone : +81-3-3966-1113

Telefax : +81-3-3558-9110

E-mail : [intdept@rikenkeiki.co.jp](mailto:intdept@rikenkeiki.co.jp)

Web site : <http://www.rikenkeiki.co.jp>