

FL-8000

Optical Interferometric Gas Concentration Meter



The FI-8000 by Riken Keiki is a portable optical interferometric gas concentration meter capable of measuring up to 8 different gases with a single device. Using a physical sensor rather than an electrochemical cell, it delivers long-lasting, accurate and reliable measurement without the sensitivity degradation common in conventional sensors. Customisable to a wide range of gases including specialised anaesthetic and fumigation gases, the FI-8000 reduces the number of devices needed on site and lowers fleet management costs.

ONE INSTRUMENT, UP TO EIGHT GASES

The FI-8000 is built around a simple but effective idea: rather than carrying multiple single gas instruments, technicians can carry one device configured to measure up to 8 different gases. The combination of gases is customised to the customer's requirements at the time of order, drawing from a wide selection that includes common industrial gases as well as specialised gases such as anaesthetic and fumigation agents.

BUILT ON PHYSICAL SENSOR TECHNOLOGY

Unlike conventional electrochemical sensors that degrade in sensitivity over time, the FI-8000 uses an optical interferometric sensor. This physical sensor determines the refractive index of a gas, which is then converted into a gas concentration reading. Because refractive index is a constant physical property rather than a chemical reaction, the FI-8000 maintains accurate, reliable measurement over a long service life when used properly, without the gradual sensitivity loss typical of electrochemical alternatives.

FLEXIBLE MEASUREMENT UNITS

In addition to the standard LEL and volume percentage units typically used by gas detectors, the FI-8000 can also display readings in MJ, kcal, g/m³, oz/cft and BTU/cf. This flexibility allows the instrument to be used across a wide variety of environments while remaining compliant with the gas monitoring regulations applicable to each application.

TRUSTED ACROSS DEMANDING INDUSTRIES

The FI-8000 is used across infrastructure, marine, oil and gas, semiconductor, steel and sustainable energy applications, reflecting its versatility as a multi-gas instrument capable of adapting to a wide range of industrial monitoring requirements. The instrument also has a long-established history in fumigation gas monitoring and anaesthetic vaporiser checking, building on Riken's background in optical interferometry that dates back to the 1930s.

KEY FEATURES

- Customisable for up to 8 different gases in a single device
- Superior durability using a physical optical interferometric sensor that does not degrade in sensitivity over time
- Displays gas concentration in multiple units including LEL, VOL, MJ, kcal, g/m³, oz/cft and BTU/cf
- IP67 ingress protection rating, suited for outdoor work
- Easy to read wide LCD display
- Intrinsically safe, IECEx and ATEX certified
- Continuous operation of approximately 18 hours (pump type) or 24 hours (manual draw type)
- Data logging with atmospheric pressure correction and temperature compensation
- Reduces the number of instruments needed on site, lowering ownership and management costs

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BUILT FOR THE FIELD

Rated IP67 and certified intrinsically safe under both IECEx and ATEX, the FL-8000 is built to handle demanding outdoor and indoor environments alike. It runs on either a rechargeable lithium-ion battery unit or a standard dry battery unit using 3 AA alkaline batteries, giving operators flexibility depending on how the instrument is deployed. Continuous operation is approximately 18 hours for the pump-draw type (TYPE P) or approximately 24 hours for the manual-draw type (TYPE A), measured at 25°C without illumination. Data logging functionality includes atmospheric pressure correction and temperature compensation, supporting accurate readings and reliable compliance documentation.

RANGE OF GASES DETECTED

Gas
Methyl Bromide (Bromomethane) CH ₃ Br
Hydrogen Cyanide HCN
Phosphine PH ₃

SPECIFICATIONS Specifications subject to change without notice

Single/Multi	Multi-gas (up to 8 gases)
Detection principle	Optical interferometer method
Sampling method	Internal sample pump (TYPE P) or manual draw (TYPE A)
Use purpose	Concentration management
Display	LCD digital (7-segment numeric display + symbol + 20-segment character display x 2 lines)
Display readout	Measuring gas, gas concentration, measuring unit, battery capacity
Power source	Rechargeable lithium-ion battery unit, or dry battery unit (3x AA alkaline)
Continuous operation	Approx. 18 hours (TYPE P), approx. 24 hours (TYPE A), new dry battery, 25°C, without illumination
Operating temperature	-20°C to +50°C, no sudden changes
Operating humidity	0 to 95% RH, non-condensing
Ingress protection	IP67
Dimensions	Approx. 154 (W) x 127 (H) x 81 (D) mm, projection portions excluded
Weight	Approx. 1.1 kg (dry battery unit), approx. 1.2 kg (lithium-ion battery unit)
Certifications	Japan EX, IECEx, ATEX
Functions	Data logging, atmospheric pressure correction, temperature compensation
External output	IrDA for data logging



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