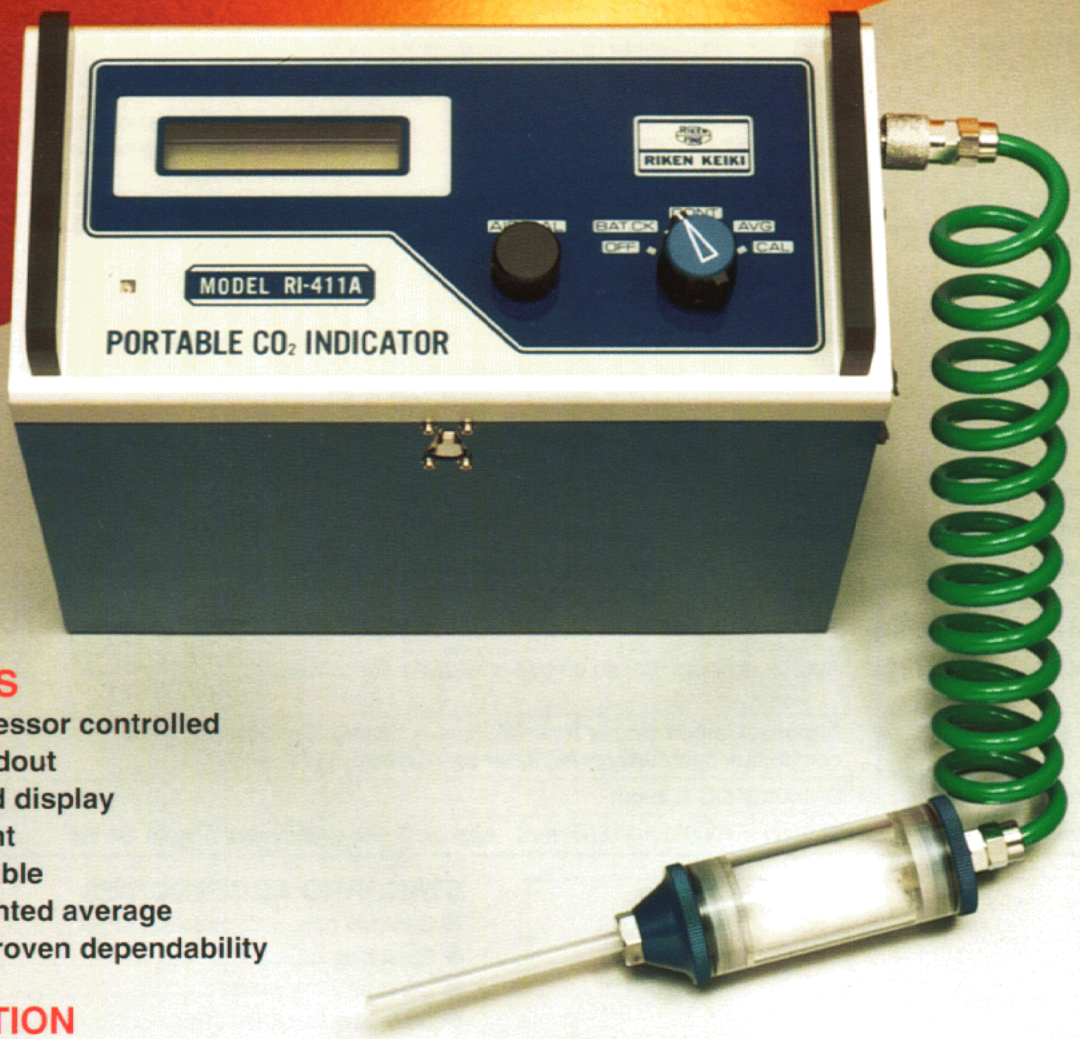
PORTABLE INFRARED CO_2 MONITOR

MODEL RI-411A

WITH DIGITAL READOUT AND AUDIBLE ALARM



FEATURES

- Microprocessor controlled
- Digital readout
- Illuminated display
- Lightweight
- Fully portable
- Time weighted average
- RIKEN's proven dependability

DESCRIPTION

CO_2 (carbon dioxide) monitoring is a necessary part of industrial hygiene requirements in many food related industries. Applications of CO_2 monitoring include breweries, mushroom growers, and food processing and transport where a CO_2 atmosphere is used to control ripening. In oxyacetylene (OA) welding, CO_2 is a potentially dangerous by-product in an unventilated space. Exposure to CO_2 causes an increasing breathing rate and resultant respiratory failure due to a combination of asphyxiation and physiological complications.

RIKEN answers CO_2 monitoring needs with a small lightweight portable, the model RI-411A. The unprecedented compact size of the RI-411A is a direct result of utilizing microprocessor circuitry for control functions Measurement of CO_2 in the ppm range is accomplished by the use of a non-dispersive infrared analyzer giving quick accurate readings. The alarm is activated at the OSHA limit of 5000 ppm. A selt-illuminating dot matrix digital display gives readings to the nearest 25 ppm. Higher CO_2 version is also available. Reading of CO_2 concentrations can be continuous or averaged over 1, 3, or 15 minutes. Averaged readings are held on the display until needed by the user. In addition to concentration readings, operational instructions also appear on the display of the RI-411A. Samples are drawn into the RI-411A by a durable diaphragm pump making it easy to test in hard-to-reach areas. Two top mounted controls are primarily responsible for simplicity and ease of RI-411A operation. Standard equipment supplied with the RI-411A includes a hose, probe, dust filter and carrying case.

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DETECTION PRINCIPLE

The infrared analyzer uses the fact that each gas absorbs infrared energy of a characteristic frequency. In the gas analyzer, an infrared source (an electrically heated wire) emits a broad band of energy which is focused on a solid state detector through a narrow band filter selected to transmit only a certain range of frequencies which are selectively absorbed by CO_2. A sample gas to be detected flows through an enclosed chamber interposed between the infrared source and the detector. The infrared beam is alternately transmitted through this chamber. If the measuring chamber contains CO_2, the amount of energy passing through the chamber is smaller than that of without CO_2. A comparison of the two levels of energy is an indication of the concentration of carbon dioxide in the sample gas.

SPECIFICATIONS

Detection principle	Non-dispersive infrared absorption (NDIR)
Measuring gas	Carbon Dioxide (CO2) in air
Measuring range	a) 0–4,975ppm (25ppm/digit)→(Standard range) b) 0–9,950ppm (50ppm/digit)→(Standard range) c) 0–1,990% (0.01%/digit) d) 0–4,975% (0.025%/digit) e) 0–9.95% (0.05%/digit) f) 0–19.9% (0.1%/digit) **Please specify one of your desired measuring range when ordering**
Readout method	Dot-matrix digital display, illuminated
Indication method	Continuous ..... Digital LCD display of instantaneous concentration Average ..... Digital LCD display of average concentration over 1, 3, or 15 minutes Battery ..... Battery capacity remaining
Alarms	Audible for ..... Gas alarm (Short pulse) ..... End of averaging period (Long tone) ..... Low battery (Continuous tone)
Linearity	Within ± (2% FS + 1 digit) at same environmental condition [In case of measuring range 0–19.9%, within ± (5% FS + 1 digit)]
Response time	Approx. 10 seconds to get 90% indication
Sampling method	Motor-driven diaphragm pump
Calibration	SPAN..... Calibrate on known cylinder of CO2 in air or N2 (span gas)
Ambient temperature & humidity	–10°C~+40°C, 10%~95% RH
Continuous operating hours	Approx. 4 hours (based on use of alkaline dry cell at 25°C)
Power supply	Alkaline, Carbon-zinc or Nickel-cadmium battery. Optional charger available for charging or continuous operation on AC 220V (or AC100V, 117V, 240V)
Recorder output	0–100mV DC (Linear)
Dimensions & Weight	250(W) × 190(H) × 113(D) mm Approx. 2.4kg (Instrument only) 5 1/2 lbs

STANDARD ACCESSORIES

❶ Carrying case with shoulder strap ..... 1 pce.
❷ Span gas ..... 1 pce.
❸ Gas sampling probe ..... 1 pce.
❹ Gas sampling hose (1m) ..... 1 pce.
❺ Screw driver ..... 1 pce.
❻ Alkaline dry battery ..... 6 pce.

OPTIONAL ACCESSORIES

① Ni-Cd battery
② Charger for AC220V (or AC 100V, 117V, 240V)
③ AC adapter
④ Recorder
⑤ Plug for outer output (with 1m cord)

RKI INSTRUMENTS

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