



## hand-held CO<sub>2</sub> meter

### PRODUCT DESCRIPTION

*This sensor is a very light-weight CO<sub>2</sub> instrument with a digital display designed to measure the carbon dioxide concentration in the surrounding air. The display shows the current carbon dioxide concentration together with the 8 hours Time Weighted Average (TWA) value. Built-in data logging and alarm functions make this portable pocket size instrument perfect for personal safety applications, as well as for various industrial and laboratory use. The carbon dioxide sensor's gold-plated infra-red waveguide and diffusion membrane filter has resulted in great reliability, accuracy and long-term stability of operation.*



### MODEL hand-held

- **State-of-the-art non-dispersive infrared(NDIR) technology to measure carbondioxide gas in per cent and parts-per-million.**
- **Displays CO<sub>2</sub> levels together with the 8 hrs TWA CO<sub>2</sub> levels on built-in LCD.**
- **Displays hazard levels on a clear green-yellow-red 5 step LED bar graph**
- **Internal audible alarm**
- **Internal automatic self-diagnostic function**
- **Over 8 hours of continuous operation with internal, rechargeable Li-Ion battery.**
- **Pocket sized - extremely handy and light-weight**

### APPLICATIONS

With a battery capacity covering more than a full 8 hours working day, the pocket sized CO<sub>2</sub> instrument works perfectly as a personal safety alarm. The LED indicators gives a quick overview over the current CO<sub>2</sub> levels, and the audible alarm calls for prompt attention when the short term exposure safety limit is exceeded. The 8 hrs long term TWA exposure is also monitored to check against the labours' hygienic exposure limit standard.

The unit is also ideal for measuring CO<sub>2</sub> in greenhouses, mushroom farms, incubators etc. where correct CO<sub>2</sub> levels are essential for the process outcome. It can also be used for diagnosing ventilation inefficiencies or distribution problems using CO<sub>2</sub> as the surrogate ventilation index.

## SPECIFICATIONS

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### CO<sub>2</sub> Measurement:

Operating Principle .....	Non-dispersive infrared (NDIR) with gold plated optical cell
Gas Sampling Mode .....	Diffusion
Response Time (1/e) .....	2 min diffusion time & 15 sec at 0.2 litre/min gas flow
Measurement Range .....	0-3 % vol.
Extended Range .....	3-10 % vol. (accuracy not specified)
Accuracy at NTP (+25° C) .....	± 3 % of reading or ± 0.02 % vol., whichever is greater
Pressure Dependence .....	+ 1.6% reading increase per kPa deviation from normal pressure
Temperature Dependence .....	=0.005 % vol. / °C at zero gas level =0.015 % vol. / °C at 3 % vol. CO <sub>2</sub>
Time Weighted Average (TWA) calculation .....	8 h time span (most recent) with 4 min sample period Reset can be selected during unit turn-on sequence
Sleep Mode.....	"Over-night" charging mode with activated ABC algorithm

### Alarm / Measurement Interface:

LEDs .....	5 step "bar graph" green-green-yellow-yellow-red LEDs with trippoints defined by the present CO <sub>2</sub> concentration and preset comparator levels
Numerical Liquid Crystal Display .....	Simultaneous display of * the current CO <sub>2</sub> concentration (in % vol.) * the 8 h CO <sub>2</sub> TWA value (in ppm) * battery status indication
Audiable horn .....	80 dBR/10cm transducer with 2kHz resonance frequency, sounding during alarm status until push-button acknowledgement is pressed
Push-button .....	Alarm status acknowledgement and back-light on/off switch
Internal Data Logger .....	Event triggered data recordings with real clock time stamps, plus the latest 8 h accumulated turn-on time of recorded CO <sub>2</sub> concentration data.
Digital Interface .....	USB cable with sensor UART-RS232 com driver

### Electrical:

Battery Charger Input .....	6 VDC / 500 mAh, with NOKIA type miniature connector
Internal Battery .....	3,6 VDC / 1400 mAh Li-ion accumulator (> 8 h. capacity)
Current Consumption .....	≤ 55 mA @ in normal mode ≤ 100 mA @ in alarm mode

### General Performance:

Compliance with .....	EMC Directive 89/336/EEC
Storage Temperature Range .....	-20° to +70° C
Operating Temperature Range.....	0° to +50° C
Operating Humidity Range .....	0 to 95 % RH (non Condensing)
Sensor Life Expectancy .....	> 15 years
Battery Life Expectancy .....	> 3 years
Self-diagnostics .....	complete power/sensor/ internal checks
Status Indicator .....	LCD triangle ikon = maintenance call
Power-up Time .....	< 30 sec. (full specs < 15 minutes)
Housing Material .....	ABS/PC blend
Dimensions (L x W x D) .....	125 x 50 x 35 mm
Total Weight .....	120 g

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