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Model 906 CO2 Analyzer for Process & Research

The Quantek Model 906 CO2 Analyzer is designed for continuous or spot measurement and analysis of carbon dioxide levels. Analysis ranges of 0-5,000ppm, 0-10,000ppm, 0-25,000ppm, 0-20%, or 0-100% vol/vol.

Simply introduce your sample gas flow into the inlet of the Model 906 CO2 analyzer, and see results on the LCD within 15-20 seconds. The inlet accepts a flow rate of 5cc/min to 1000 cc/min. If you don't have a source of flow or positive pressure, the analyzer can be equipped with an internal pump to draw in sample gas for analysis.

CO2 SENSOR – BASICS

The sensor design is compact, has a low internal volume and requires only a low sample flow of about 5 to 1000 cc/min. Our market leading CO2 sensor uses the latest in dual-wavelength NDIR measurement principles, reducing drift and allowing for results in as little as 10-15 seconds. While the sample introduced should be clean and dry (non-condensing), should moisture enter the analyzer, the Model 906 is equipped with an internal moisture trap filter. This provides a last barrier of protection, and is user-replaceable (we provide spares).

CO2 SENSOR – DETAILS

The Model 906 uses a solid-state infrared sensor which has no moving parts, a compact optical cell, and microprocessor-based calibration factors using a 6th order polynomial equation to linearize the full range measurement up to 100%. Infrared CO2 measurements are inherently non-linear, especially over a high range of concentrations. The math algorithm used in the 906 yields more accurate measurements over a much wider range of concentrations than other methods.

EASE OF SAMPLING

Sample gas flows into the analyzer through the front panel fitting, and vents out through an exhaust port on the back panel. The exhaust port can also be equipped with a connectible luer fit connection, should you wish to keep your system closed.

The sensor operates at atmospheric pressure, and a flow bypass in the internal plumbing arrangement allows for excess pressure to vent. This allows for higher acceptable flow rates, without affecting the accuracy of your measurements.

DATA COLLECTION OPTIONS

If you have your own data acquisition equipment already, we can equip the Model 906 with a Vdc or 4-20mA output on the back – linear to the concentration displayed on the LCD.

If you do not have data acquisition equipment, we offer a complete [data logging solution](#). This solution allows you to record readings at intervals from 1 second to 18 hours, and comes complete with graphing/analysis software. The results can then be exported via .csv or .txt files to other software for analysis.

ABOUT THE OPTIONAL BATTERY

With its low power requirement, the Model 906 can be operated with an optional battery for those applications where AC power is not readily available, or for convenience if spot checking samples at different locations. A totally sealed, long-life internal 12 Vdc battery accepts a full or partial charging cycle and will operate the unit for up to 8 hours. The charger module plugs into any international 100-240V outlet, for charging or continuous operation. The analyzer need not be turned off during the charge cycle.

ABOUT THE WARRANTY

The Model 906 is backed it up with a two year warranty, twice the industry standard. The advanced design allows an output requiring less frequent calibration. It provides a stable, drift-free linearized voltage or current output that is much less susceptible to external electro-magnetic interference than conventional analog electronics.

[Questions about conditioning your sample? Please see our blog post.](#)

Specifications

- **Range** - 0.0 to 100% Carbon Dioxide (*Other Ranges: 0 to 1%, 0 to 2.5%, 0 to 10%, 0 to 20%, 0-30%, 0-50%*)
- **Resolution** - 0.1% CO₂ for 0 to 30, 0-50, and 0 to 100% ranges (*0.01% CO for 0 to 2.5%, 0 to 10%, or 0 to 20% ranges*) (*0.001% CO₂ for 0 to 1%*)
- **Analog Output (Optional)** - 0 to 1Vdc, 0-5Vdc, 0-10 Vdc, or 4-20mA, linear, proportional to CO₂ concentration
- **Accuracy** - +/-1% of reading, or 0.2% CO₂ for 0-100% range
- **Drift** - less than 0.1% per month
- **Sensor**- Infrared (NDIR); non-depleting with no moving parts
- **Sensor Body** - Anodized aluminum
- **Calibration** - With standard calibration gas (available from Quantek if needed); SPAN adjustment on rear panel ZERO set with auto-zero button located on rear panel
- **Calibration Frequency** - Within two years of original manufacture; each year thereafter
- **Power Supply** - Internationally compatible charger or power supply, 100/240V (50/60Hz) to 12V
- **Sample Pump** - Optional; internal, with on-off switch on front panel, draws about 5 cc/sec
- **Battery Operation** - Optional, with internal rechargeable 12 Vdc battery
- **Size** - 10 in. x 4 in. x 10.5 in. (25.4 cm x 10.6 cm x 26.67 cm)
- **Weight** - 7 lbs. (3.18 kg)
- **Warranty** - Two Years, parts and labor
- **Standards** - CE, RoHS
- **Consumables** - Internal, user-replaceable moisture and particulate filter; external 4in. moisture removal cartridges
- **Origin of Goods** - Our goods are manufactured in the U.S.A.

Applications

- Bioreactors
- Fyrite Replacement
- Gas Blending Systems
- Fruit Storage Areas
- Fermentation
- Algae Experiments
- Welding Gases
- Controlled Atmosphere Rooms
- Carbon Capture and Storage
- Incubation Experiments
- Cell Culture analysis
- Greenhouse CO₂ Research
- Biofuel Experiments
- CO₂ Mitigation Research
- and Many More

What's Included

- **Internationally compatible (100-240V) power supply / charger**
- **A – double orange connector (1/16 ID tubing)** – useful if you choose to inject sample gas into the inlet of the analyzer using the supplied 60 cc syringe.
- **B – Two particulate filters** – These leur-fit filters can be attached to the inlet fitting of the analyzer to provide extra protection from particulates.
- **C – T style connector** – This fitting is useful as a flow limiter – by passing your sample gas through this fitting, and leaving one of the T stems open, you can reduce the flow reaching the analyzer.
- **D – Inlet fitting (accepts 1/4in ID tubing)** – This is a replacement spare for the inlet fitting in the event that your original fitting is damaged or the threads stripped.
- **E – Adjusting screwdriver for potentiometers** – This screwdriver fits the potentiometers on the back of the analyzer.
- **F – Rubber Washers** – These are replacement rubber washers. One is already installed behind the inlet fitting to provide a leaktight seal.
- **G – 60 cc syringe for sample injection** - Useful for syringe injection. Note, however that this method may require at least 120 cc of gas to get a proper reading.
- **H – 1/16 ID tubing** – This tubing can be attached to one of the orange hubbed needles, and affixed to the inlet fitting.
- **I – Internal inline moisture trap filter (PTFE .45 micron)** – This filter is a replacement for the inside particulate and moisture filter in the analyzer. Should you accidentally allow moisture into your gas flow, then find the readings not to change as expected, then you may need to replace this filter inside the analyzer by removing the top cover. This is a four layer filter which will completely block gas flow upon saturation.

Optional Items

- **Internal Pump** - A mini diaphragm pump installed inside the analyzer, and draws approximately 5 cc per second. Great for situations where there is no source of flow. Expected -pump lifetime is 8-10 years.
- **Analog Output (vdc)** - Terminal strip is provided on the back of analyzer to attach to your own data acquisition equipment. The concentration measured is proportional to the analog output, and can be modified to fit your system with a full scale of 0-1vdc, 0-5 vdc, or 0-10vdc.
- **Analog Output (4-20mA)** - Similar to the vdc output, we can provide a current output with a linear signal proportional to concentration. This option is useful for very long cable runs, as a break in the cable will be detected by your data collection equipment.
- **Two Mode (Continuous) Pump Switch** - Enables use of the pump in two modes - one mode is clicked "on" and leaves the pump running until undClicked. Pressing the switch lightly enables operation according to the user adjustable potentiometer timer.
- **Cycling Pump** - An internal circuit control allows you to program the pump to operate for x sec/min/hr and then rest for y sec/min/hr. This is especially useful for long term experiments where you do not want the pump to operate continuously, but want a fresh sample drawn in occasionally. We set it at the factory, but you can change it later. Most customers choose roughly 5 minutes on, and 55 minutes off, to run experiments over the course of days.
- **Data Logger** - Our data logger includes everything you need for collecting analysis data from our benchtop analyzers. For analyzers with a vdc analog output installed, the data logger is used to collect measurements for offloading to a PC or Mac.
- **Internal Rechargeable Battery**
- **Fine .01% Resolution** - An extra digit of resolution can be provided for applications where accuracy is of the utmost importance. Please note that for 0-20% CO2 analysis range, we can provide this at no additional charge.
- **Recirculating Exhaust** - Connectible 1/8in leur fit outlet at exhaust port enables re-capture of gas for closed systems.
- **Swagelok Inlet** - Installed brass Swagelok inlet fitting for compatibility with your existing equipment.