

Introduction

The Fermentation Monitor – INNOVA 1313 is designed for monitoring fermentation processes. The 1313 simultaneously measures the concentrations of Oxygen, Carbon Dioxide and Hydrocarbons, such as Ethanol, Methanol and Methane. It can be integrated into permanent monitoring systems together with up to three multiplexers, enabling samples to be drawn from up to 36 sampling points to provide fast and accurate measurement results, even over wide concentration ranges.

The 1313 provides a low cost, quality solution. The instrument does not demand highly skilled operators and the acoustic measurement principle ensures that calibrations are only required every six to twelve months.

The PC software supplied with the monitor provides a user-friendly way to set up and calibrate the monitor prior to making measurements, and displays real-time measurement data graphically while measurements are being made.

Measuring

Measurement samples can be drawn from separate sample points in the process line and delivered to the monitor via a Multipoint Sampler – INNOVA 1309 and tubing. The sample flow rate to the monitor is 130 ml/minute.

Measurement Methods

Two acoustic-based measurement methods are employed in the monitor: Photoacoustic Spectroscopy to measure the Hydrocarbon and Carbon Dioxide concentrations and Magnetoacoustic Spectroscopy to provide Oxygen concentrations.

The same microphone is used as a transducer for both measurement methods, providing a true real-time relationship between the measurements.

These measurement methods only require small quantities of sample gas, providing results for all three gases in approximately a second.

Calibration and Maintenance

Even through recalibration is only required every six to twelve months, it is easily

Uses:

- Production control
- Process control
- Process development
- Laboratory process screening

Features:

- Stability – long intervals between calibrations
- Low running costs
- Negligible maintenance costs
- Stand-alone or integrated operation
- Fast response time
- Wide dynamic range
- 19-inch rack mounting case
- 4 – 20 mA galvanic isolated analogue output
- Windows XP software for calibrations, set up and measurement via an RS-232 socket
- Integrated control of multiplexer