



SOLARIS™
BIOTECH

By Donaldson



METIS
CATALOGUE

METIS is a multi-channel, combined gas analyzer for O_2 and CO_2 , designed and manufactured specifically for use in bioprocessing, fermentation, and cell culture applications. The system is supplied with a PC based HMI for monitoring & control.

The unit is equipped with an inlet line selector (multiplex) that allows the unit to be connected with up to 8 process channels. Gas concentration values of the two gases are displayed on the PC monitor and represented/analyzed graphically online, with subsequent calculation of the respiration coefficient.

CO_2 concentration is determined through a zirconium dioxide or galvanic cell sensor, and CO_2 concentration is measured through an infrared sensor.

The utilization of high technology, minimal internal volume transducers, as well as moving parts allows improved gas interchange time and reliability. The electronic components are designed to be flexible and allow management of analogue and digital signals/control.



Product Description



CHANNEL SELECTOR

The software allows the integration and choice of 1 to 8 sources of gas to be analyzed. Channel switching is performed with use of miniature solenoid valves. After each switch, the gas moves through a PTFE filter to block suspended particles and to eliminate any liquid contamination.

TRANSDUCERS

The measurement accuracy requires the gas flow rate variation not to exceed a defined value. Therefore, to ensure constant flow through the transducers, the system utilizes an integrated microflow regulator to accommodate variations in supply pressure.

PLC

The system utilizes a PLC board to control integrated components and instrumentation.

PC

The user interface consists of a touch screen HMI, used for the management of all parameters and data management.

Leonardo Software



**The gas analyzer is managed by a touch screen HMI. Control is based on PLC and SCADA system.
The SCADA supervisory software is displayed in LabView 8.**

The software autonomously switches channels to collect data from various processes. Between readings from different channels, purging phases are executed to ensure optimal performance during gas analysis and to eliminate residual gas traces from previous monitoring sessions.

The reading and purging times for each channel can be configured and customized within the workflow management section, providing flexibility for diverse applications.

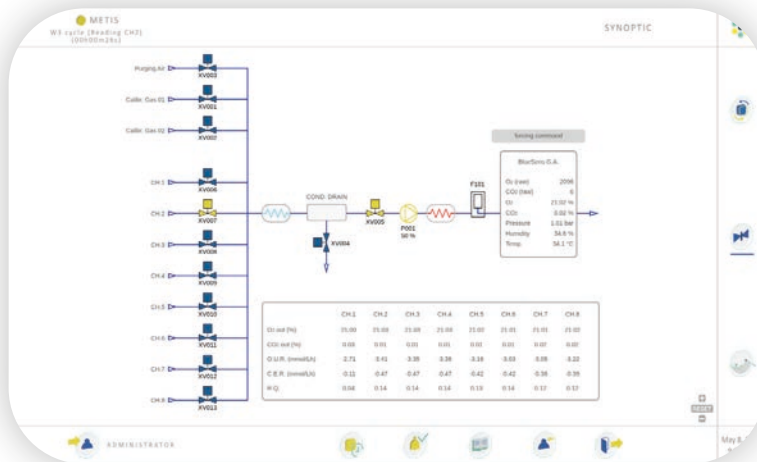
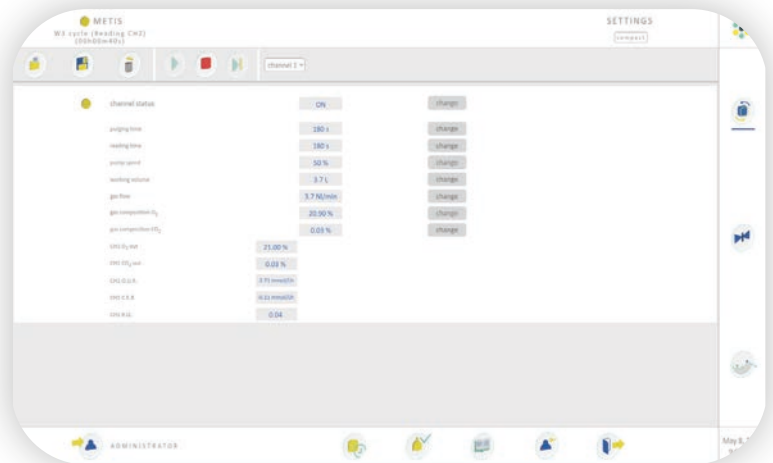
Each channel will be read cyclically for a predetermined period, with data being stored accordingly. Therefore, data from each channel will be collected exclusively during the designated reading phase of that specific channel, and not continuously throughout the entire process.

CHANNEL CONFIGURATION & MONITOR

OUR (mM O₂/L·h) = Oxygen Uptake Rate

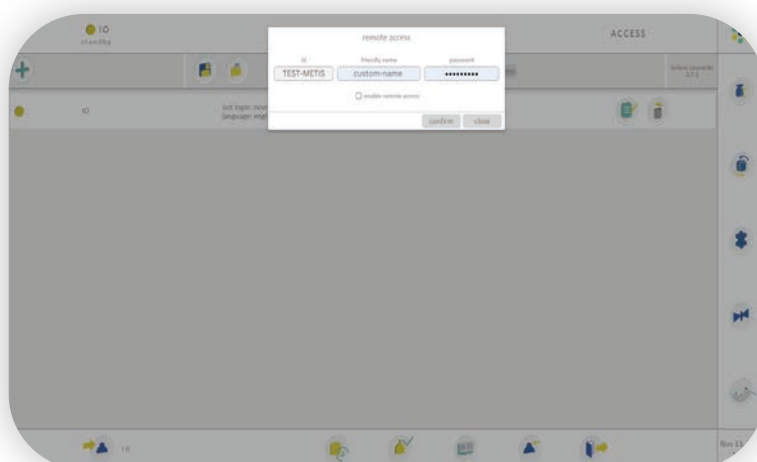
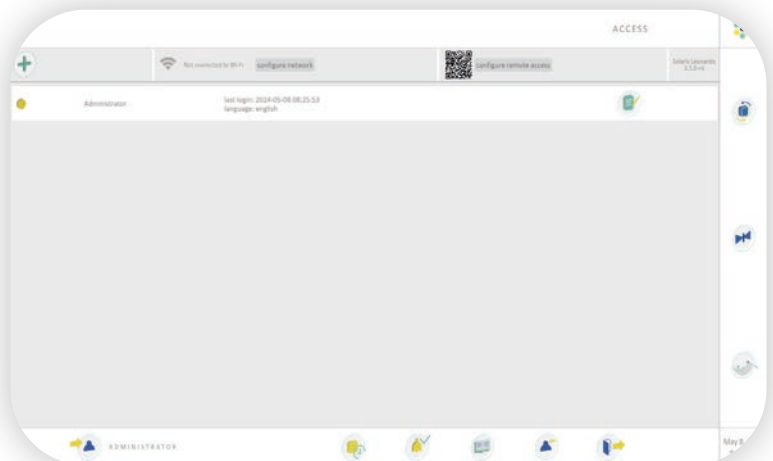
CER (mM CO₂/L·h) = Carbon Dioxide
Evolution Rate

RQ = Respiratory Quotient = CER / OUR



SYNOPTIC

MULTI-LEVEL ACCESS



REMOTE CONTROL

Technical Data

CONCENTRATION

Ranges	0 - 10 % vol. CO ₂ , 0.1 - 25 % vol. O ₂ 0 - 25 % vol. CO ₂ , 0.1 - 25 % vol. O ₂ 0 - 10 % vol. CO ₂ , 1 - 50 % vol. O ₂ 0 - 25 % vol. CO ₂ , 1 - 50 % vol. O ₂ 0 - 10 % vol. CO ₂ , 0-100 % vol. O ₂ 0 - 25 % vol. CO ₂ , 0-100 % vol. O ₂
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O₂

Measuring principle	Zirconium dioxide
Accuracy	< 0.2% Full Scale ± 3% value
Drift	< ± 2% value / year
Lifetime of sensor element	Approx. 15,000 operating hours
Temperature	Inside of the sensor unit 580°C / 1076°F
Measuring principle	Galvanic Cell
Accuracy	< 0.2% Full Scale ± 3% value
Drift	< ± 2% value / year
Lifetime of sensor element	Approx. 900.000 Vol. % h operating hours at 1 bar(g) (14.5 psi)
Temperature	Inside of the sensor unit approx. room temperature

CO₂

Measuring principle	Infrared: dual wavelength
Accuracy	< 0.2% Full Scale ± 3% value
Drift	< ± 2% value / year
Lifetime of optical components	Approx. 3 years
Temperature	Inside of the sensor unit 3°C / 5.4°F higher than process temperature

GENERAL

Temperature range	15 - 40°C / 59°F - 104°F
Pressure range	0.8 - 1.3 bar(g) / 11.6 – 18.85 PSI absolute pressure
Operating humidity	0 – 100% RH, integrated humidity compensation
Housing	Stainless steel, IP65
Materials	In contact with process gas Stainless steel, viton, sapphire, PTFE, polymer H.L., nitrile
Filters	PTFE 0.22 µm, PTFE 5 µm
Power	Power supply 24V 1A
Storage conditions*	0 - +60°C / 32 - 140°F ; < 75% RH noncondensing Or 0 - 60°C (32 - 140°F); 5 – 75% RH non condensing * depending on chosen configuration

Get in touch



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OUR OFFICES SHOWROOMS





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