HIDEX

Hidex Sense Gas mixer unit

425-387 Hidex Sense Gas mixer unit

Simultaneous regulation of CO_2 and O_2 environment enables hypoxia research, long-term cell proliferation measurements, and other biological studies of anaerobic organisms.

Hidex Sense environment control system consists of a high precision digital gas flow mixer connected to the enclosed Sense measurement chamber. The control unit is equipped with a touch screen to adjust settings and to monitor the gas concentrations.

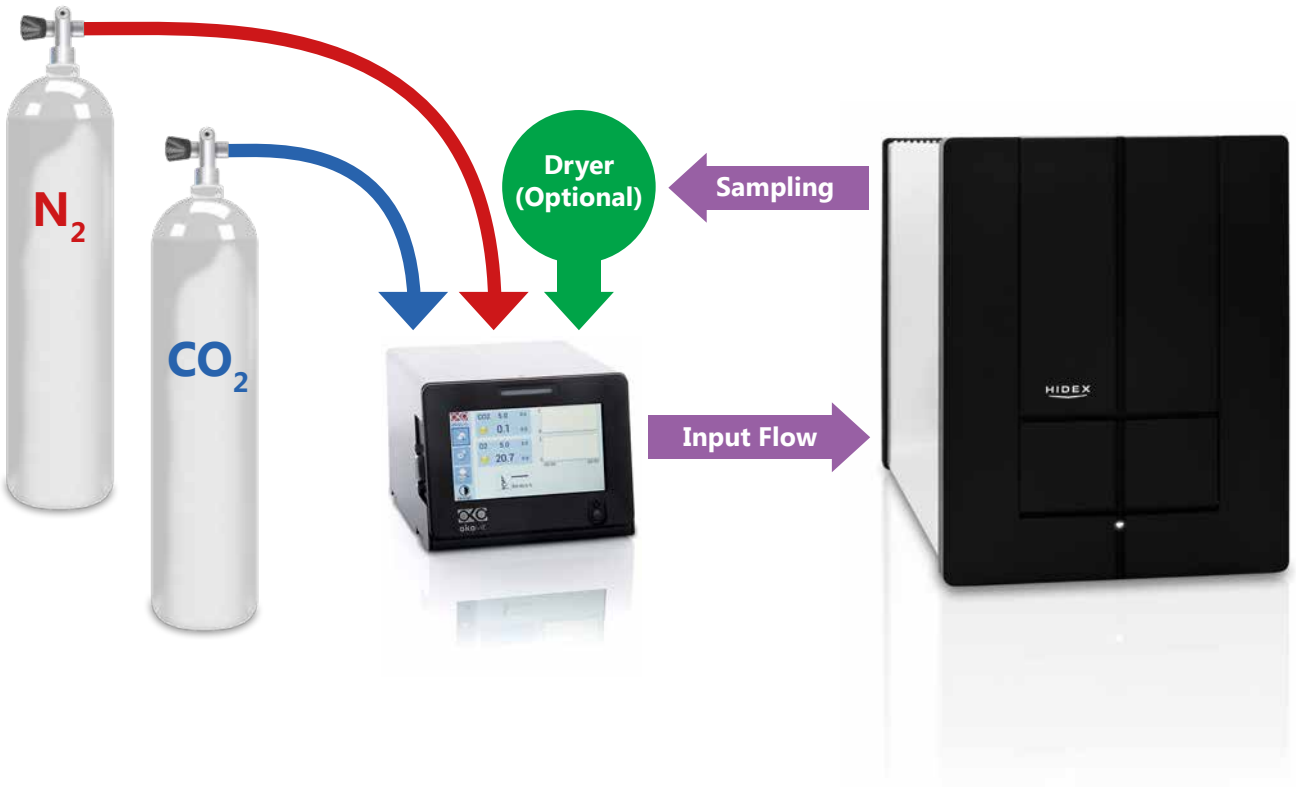
The unit controls CO_2 and O_2 concentration by measuring and mixing CO_2 and Nitrogen continuously. Nitrogen is only needed for oxygen control. The actual gas flow and concentrations are automatically recorded by the mixer unit, from where these can be displayed on the instrument computer, or loaded to a USB device.

The system features special functionality to reduce gas consumption and fast recovery time after opening the microplate loading lid. An external audio alarm can also be connected to the unit in case the conditions require operator attention.

CO_2/O_2 Controller Setup

The controller regulates CO_2 and O_2 by infusing pure CO_2 and N_2 into the Sense measurement chamber, obtaining an adjustable CO_2 concentration in the range 0-20%, and an O_2 concentration in the range 1-20%.

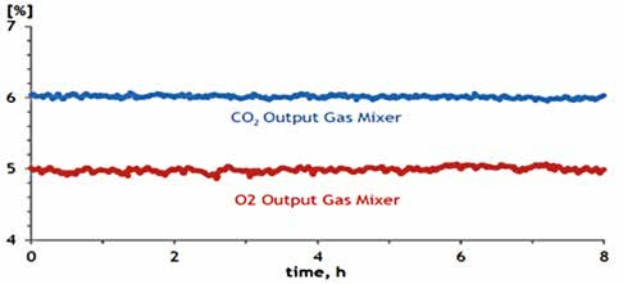
The controller samples the CO_2 and O_2 gas concentrations every 30 second from the enclosed Sense microplate measurement chamber. The sampled gas is dehumidified with a membrane dryer (optional).



CO_2/O_2 Consumption and stability

The typical gas consumption is exceptionally low for a microplate reader, less than 0.5 liters/minute to keep CO_2 at a 5% steady state, and 7-10 liters/minute of Nitrogen to keep O_2 at a 1% steady state. Thus e.g. a 40 Kg CO_2 tank lifetime is estimated to 30 days of continuous use.

The graph shows typical CO_2 and O_2 concentration stability.



Sense CO_2/O_2 Controller Specifications

Operation mode	Adds pure CO_2 and/or N_2 to the measurement chamber
Concentration range	CO_2: 0-20%; O_2 1-20%
CO_2 accuracy	0.1%
O_2 accuracy	0.1%
Set point resolution	0.1%
Min/Max Pressure for CO_2 input	700 mmHg to 5 barg (72.5 psig)
Min/Max pressure for N_2 input	700 mmHg to 1.8 barg (26.1 psig)
Max infusion rate for CO_2	12 l/min @ 5 barg (72.5 psig)
Max infusion rate for N_2	27 l/min @ 1.8 barg (26.1 psig)
Outlet pressure	Ambient
CO_2 Sensor	Non dispersive Infrared (NDIR) dual wave length detector
O_2 Sensor	Optical sensor
Sensor life time	10 years for CO_2 sensor, 5 years for O_2
CO_2 and O_2 Input Gas connectors	6 mm OD push in fittings
Output Gas connector	Panel Mount Connector, 3.2 mm ID Tubing
Suction pump	Integrated pump for gas sampling
Gas sensor input connector	Panel Mount Connector, 3.2 mm ID Tubing
Dimensions	130x158x104 mm
Weight	1600 g
User interface	Touchscreen display
Sensor calibration mechanism	Comparison with external meter, or alternatively span gas
Recommended sensor calibration period	CO_2 one year, O_2 one year
Gas dryer (Optional)	To dehumidify the sampling gas prior to concentration measurement, needed only if the controlled volume is humid
Alarms	Buzzer, flashing and External Alarm Connector
Data logging	RS232 and MINI USB ports for data logging trough Okolab DATA LOG software or any third party software

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Today more than 3000 Hidex precision instruments are at service in leading laboratories worldwide as well as in some of the hardest conditions on the planet. Jungles and deserts, oil platforms and ocean going vessels – even submarines are no challenge for Hidex instruments.

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