

ZABS Flow-Through Electrodes

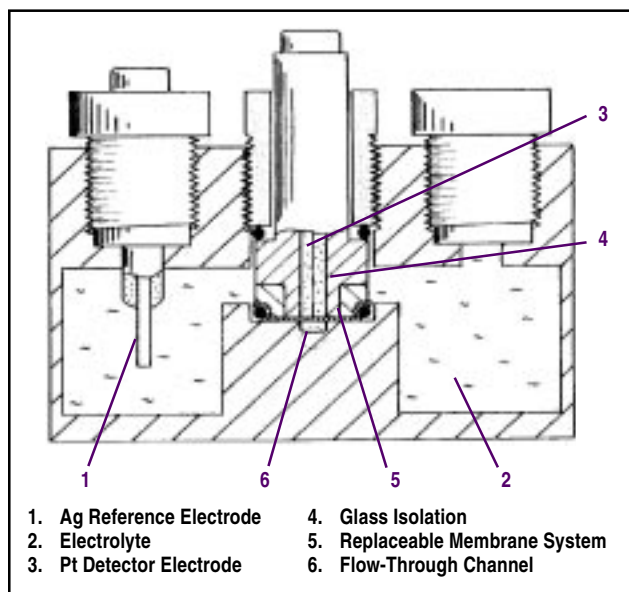
ZABS Flow-Through Electrodes

On studies with isolated perfused organs (heart, lung, liver, kidney) the continuous measurement of several electrochemical parameters in the perfusate is important. The type of parameter measured depends on the organ used and on the performed study. In experiments with isolated hearts pO_2 often is measured to calculate the myocardial oxygen consumption. In experiments with isolated lungs pO_2 and pCO_2 are generally measured to evaluate the ventilation efficiency. The pH is mainly measured as a control value (sometimes in studies on isolated lungs it is used to evaluate the CO_2 exchange into the solution during ventilation). Other parameters like Ca^{++} , K^+ or Na^+ may be of interest in experiments with the isolated liver.

The ZABS flow-through sensors permit precise continuous or discontinuous measurement in liquid media and are available to measure pO_2 , pCO_2 , pH, ion-selective electrodes for Ca^{++} , K^+ , Na^+ , Cl^- , NH_4^+ , Li^+ , NO_3^- , glucose, lactate and alcohol. These electrodes are all flow-through type electrodes and require a pulsation-free roller pump to perform the constant flow through the electrode. A roller pump with at least 6 rolls is necessary to get a low pulsation in the measurement channel. The Peristaltic Pump is an ideal choice for this system.

The pump flow rates can range from 0.5 to 3 ml/min, but it must be constant during calibration and measurement.

All ion selection electrodes require a separate reference electrode from the pH electrode. To obtain a long-term stability the reference electrode must never come into direct contact with the measured solution. The electrical contact, necessary for the measurement, is obtained by pumping KCl through the reference electrode into an electrolyte bridge. In the electrode bridge the KCl line and the solution are mixed, the electrical contact between the reference and the electrode is performed by the KCl. The measured solution cannot be reused to perfuse the organ because it is mixed with KCl. A small amount of approximately 0.5 to 2 ml/minute is used for accurate measurements. Because of the high impedance of all sensors it is essential to provide screening of the measuring circuit to guard against electrostatic discharges and disturbances. This is provided by a U-shaped aluminium case which contains all the electrodes and references. These electrodes connect to PLUGSYS modules OPPH, pH or EMM depending on their function.



Flow-Through O_2 Chemosensor

The O_2 flow-through sensor with replacement PTFE membrane system consists of a Plexiglas body with a PT-measuring electrode and a built-in Ag-reference electrode. Both electrodes are immersed in an electrolyte solution. The PTFE membrane is gas-permeable but impermeable for ions. The sensor measures between 0 and 100% O_2 . The sensor can be used in blood, saline solutions or gas mixtures.

- Amperometric flow-through sensor
- For measurement of O_2 in liquid or gaseous state

Catalog No.	Product
CGS 8655.73	Flow-Through O_2 Chemosensor
CGS 8656.73	Shielding Case for O_2 Sensor
CGS 8657.73	Replacement Membrane for O_2 Sensor
CGS 8658.73	Electrolyte for O_2 Sensor

Flow-Through Biosensors for β -D-Glucose, L-Lactate, Alcohol, H_2O_2

The biosensor for glucose or lactate consists basically of a flow-through sensor for O_2 equipped with an enzyme-membrane system.

- Amperometric flow-through sensor
- For measurement of β -D-Glucose, L-Lactate, Alcohol, H_2O_2

Catalog No.	Product
Descontinuado CGS 8659.73	Flow-Through Biosensors for β -D-Glucose, L-Lactate, Alcohol, H_2O_2