



FC 100 FLOWCELL

INSTRUCTIONS FOR USE

Introduction

The flowcell consists of three parts:

1. An electrode holder which is made from black acetal. The electrode is positioned in this holder by pressure exerted by the cap on three O rings at the cable-entry end of the electrode. This seals the nose of the electrode against the precision shaped plastic tip of the holder, so that only the membrane-covered cathode protrudes.
2. An acrylic base through which the medium flows.
3. A collar to accommodate a clamp stand rod to allow the flow cell to be mounted in a constant temperature water bath.

The flowcell may be used either to monitor the oxygen level of water or other media in a flow line, or to measure the oxygen at the inlet and / or outlet of a flow-through respirometer.

Assembly

Remove the cap of the holder and insert the electrode into the holder. Pass the knurled cap of the holder over the cable and screw it back on tight.

When doing this it is essential that the electrode holder is held vertically, so that the topmost O ring is centred symmetrically around the cable. If you do not do this, the top O ring can be distorted up through the opening in the cap. This in turn will mean that insufficient pressure is exerted on the electrode, which may cause leakage when the tip of the holder is immersed in liquid.

Screw the electrode holder into the acrylic base. Connect the flowline tubing from the preparation to the inlet stainless steel tube, and connect other tubing to the outlet stainless steel tube.

Experimental procedure

Lower the flowcell into the constant temperature water bath (which should be placed adjacent to the respirometer cell if used for flow-through respirometry) so that the tip of the electrode is not more than about 3cm below the water level. Fix in position by tightening the screws on the collar and clamp stand.

On no account should the holder be located so that water flows or splashes into it via the cable entry hole in the cap.

Commence the flow of medium through the flowcell. Ensure that there are no bubbles of air trapped against the electrode tip. Tap the base piece to dislodge them if this occurs.

Ideally the electrode should be calibrated by passing deoxygenated and air saturated medium through the flowcell. If this is not possible, the electrode should be calibrated within the electrode holder, which can be inserted into a beaker which is held in the constant temperature water bath. For full instructions on calibration see the 782 or 929 manuals.

The base of the flowcell should be unscrewed and thoroughly washed in mild detergent each day, to prevent the growth of a surface film of bacteria whose respiration could produce errors in oxygen measurements at low flow rates and/or at low oxygen concentration.