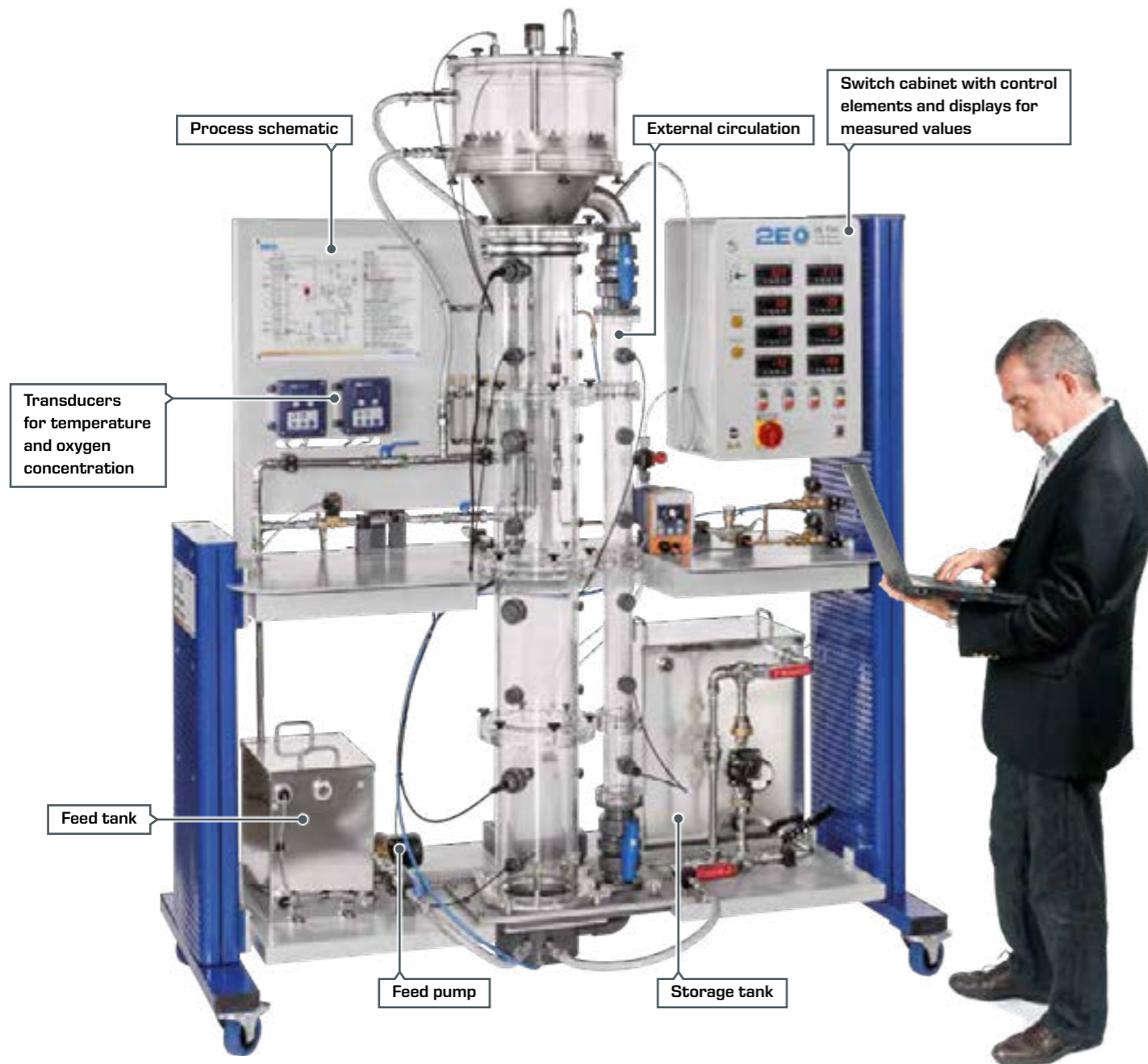


CE 730 Airlift reactor

Powerful bioreactors

Supplying the microorganisms (biomass) with oxygen is of crucial importance for the performance of an aerobic bioreactor. Another important aspect is uniform mixing of the reactor contents. Airlift reactors meet both of these challenges to a particular degree.

In an airlift reactor mixing occurs exclusively through the aeration, which is necessary anyway. Mechanically moving parts (e.g. stirring machines) are not necessary. The retention of the biomass in the reactor required for effective operation is achieved by circulation. Airlift reactors are used in biotechnology and in biological wastewater treatment.



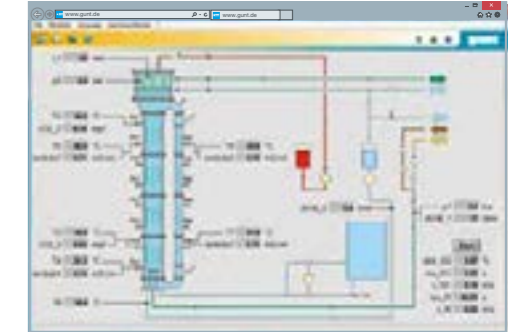
Airlift reactor CE 730

The educational focus is the functional principle and operation of an airlift reactor. These mainly include releasing oxygen in the liquid phase (water) and determining the flow conditions in the reactor.

The core of the trainer is an airlift reactor with external circulation. There are several different distributors available for aeration of the reactor. This allows you to study how bubble size influences mass transfer. Two measuring points for conductivity are located on the circulation at defined intervals. Adding a salt solution causes a sharp increase (peak) in conductivity at both measurement points, with some delay between them. The time difference between the two peaks and the distance between the measuring points can be used to determine the flow velocity in the reactor.

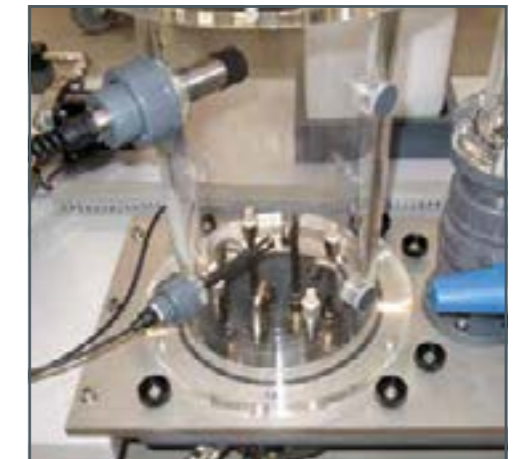


Airlift reactor during a test run



Software

The clearly-arranged software included with CE 730 continuously displays all key process variables. You can of course save the measured values for analysis.



Various distributors for aerating the reactor

About the product:



Learning objectives

- influence of the superficial gas velocity on:
 - ▶ gas content
 - ▶ mass transfer coefficient
 - ▶ mixing time
 - ▶ superficial fluid velocity