



Level



Pressure



Flow



Temperature

Liquid  
Analysis

Registration

Systems  
Components

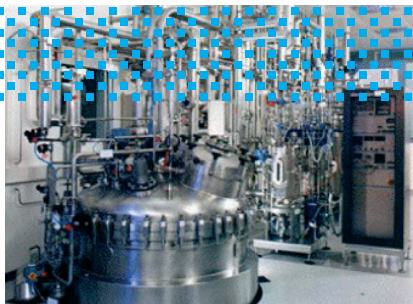
Services



Solutions

# OUSAF44 sensor with OUM960 analyzer in Chromatographic Separation- Pharma.

Online monitoring of pH, conductivity, UV absorption, water/alcohol and bubbles



Typical fermentation system



OUSAF44 on-line sensor with OUM960 analyzer



Checking fermentation vats

**To optimize the control of chromatographic separation, the use of on-line analytical measurements are required.**

## Customer profile

Chromatographic separation is used by pharmaceutical companies to control the concentration of mixtures to ensure the final product meets their specifications.

## Application description

Many pharmaceutical processes starts with fermentation of solids using organisms such as yeast or bacteria.

After the fermentation has ended, the product is extracted from the yeast/bacteria and the liquids and solids are separated using a centrifuge.

After the separation of solids from the liquid, the liquid is further purified and concentrated using liquid Chromatographic and employing separation media specified by the type of product.

Gel filtration: sorts material by molecular size

Ion exchange: binds material by electrical charge

Hydrophobic interaction: separation by hydrophobic character

Affinity: binds material by attachment to specific binding site.

These chromatographic methods can be performed under high and low pressures and with temperatures from +35°F (2°C) up to approximately +77°F (25°C).

## Solution

To control the separation process specific liquid parameters like pH and conductivity pre and post column is needed. Bubble detection and UV analyzer collect the product fractions.

Endress+Hauser has a variety of analytical instrumentation to suit the needs in chromatic separation. All sensors can be SIP/CIP in-line and all gaskets used are USP Class IV.

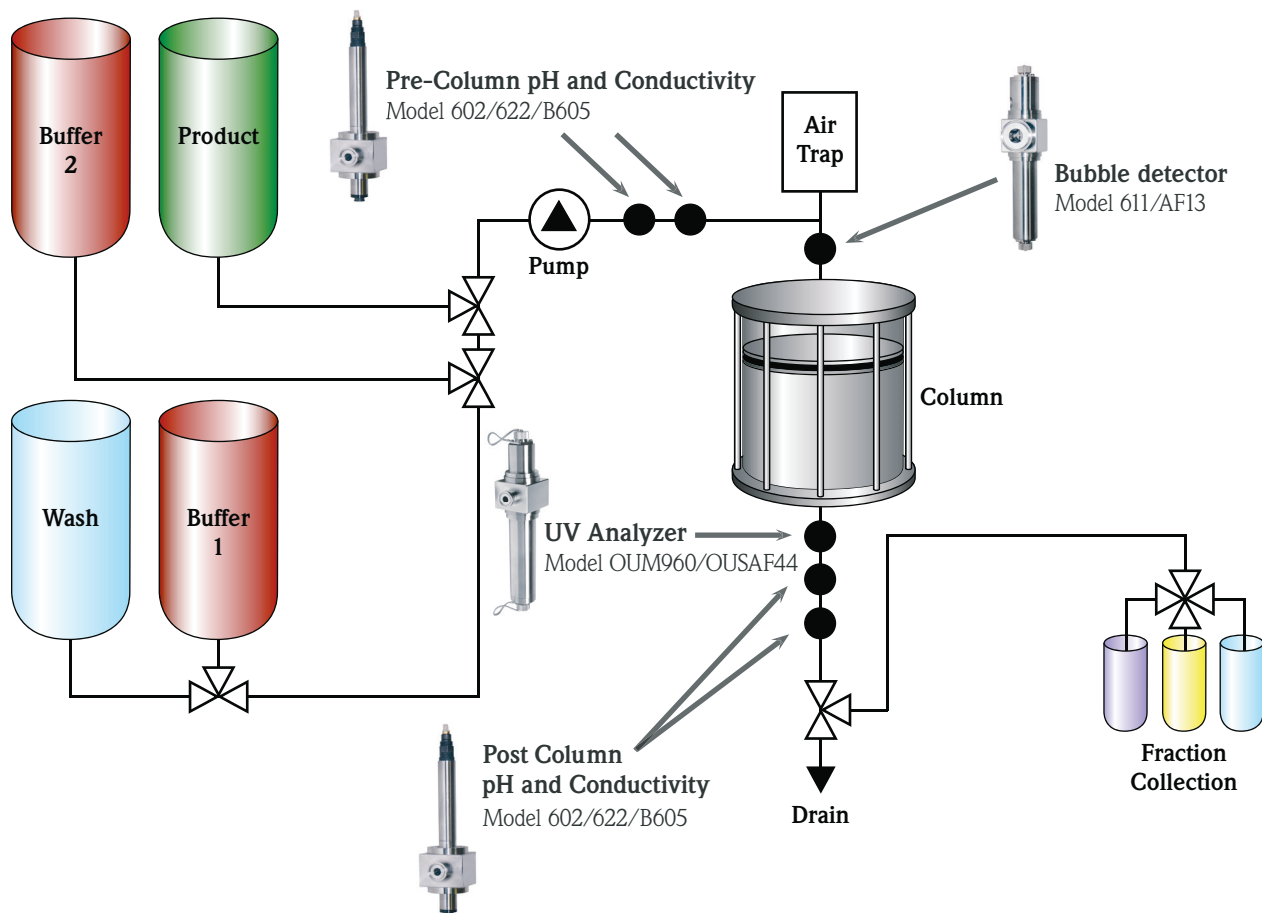
The model 602/622 with the B605 flow cell is unique for life sciences applications. Combining both a 4 pole conductivity sensor and the pH probe in the same flow cell for measurements pre and post column. Many separation processes requires precise and reliable measuring of conductivity with a range from 0-200 mS/cm and pH from 0-14.

To protect the column from being loaded with air bubbles, the AF13 sensor offers both interface and bubble detection as a unique feature.

To collect the different protein fractions separated by the column the UV analyzer OUM960/OUSAF44, 45 and 46 are ideal. These sensors have the unique non liquid calibration feature EasyCal® enabling the user to perform easy calibration check of the UV analyzers before each batch to verify correct operation.

In some high pressure separation processes, a precise alcohol mixture is used to unload the right proteins from the column. Endress+Hauser has developed a unique NIR analyzer Model 683/AF23 to control the alcohol mixture with a range of 0-100% alcohol/water. The unit also features temperature compensation and is available as a temperature output for the control system.

For more information, contact  
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Simplified chromatography schematic

ISO 9001:2000 Certified

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