



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.

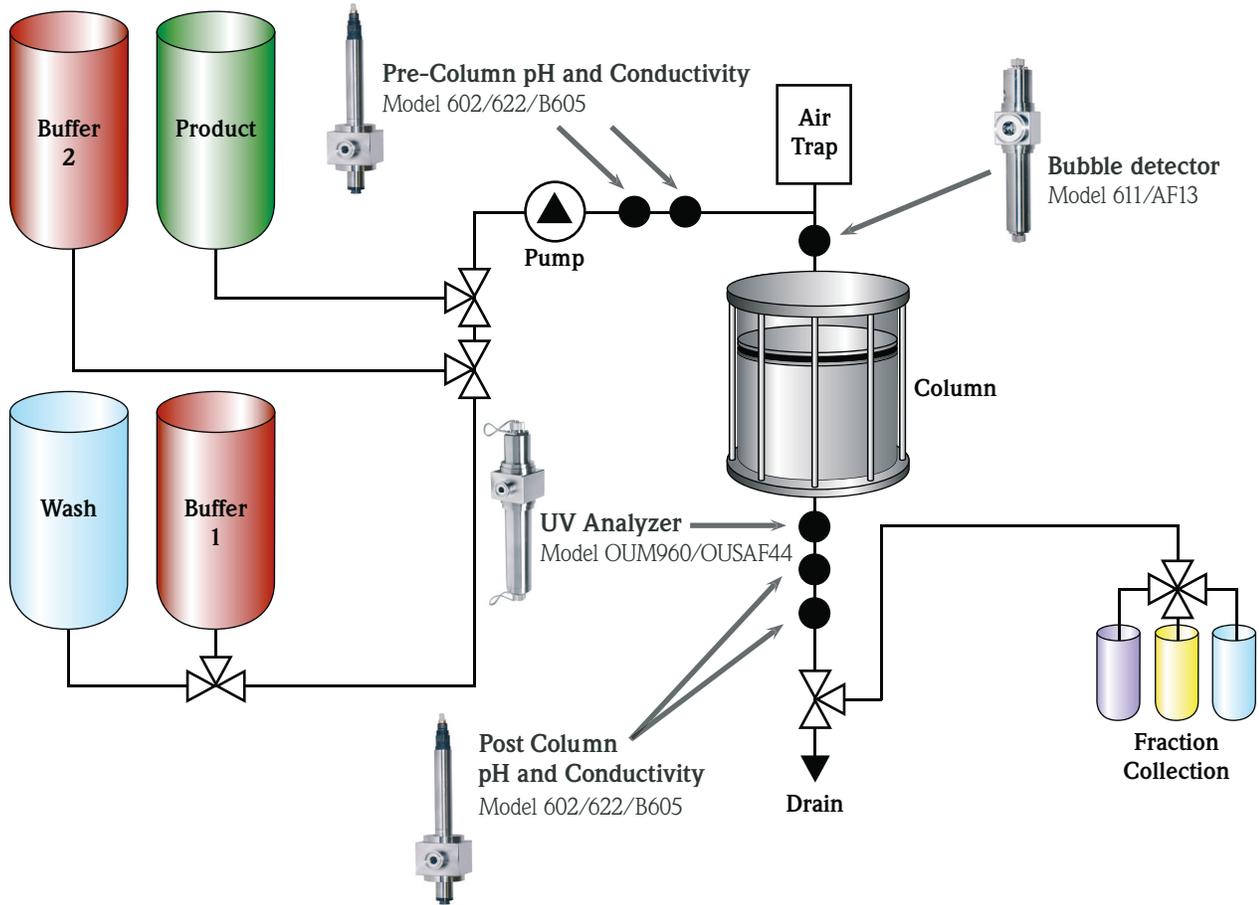
The model 602/622 with the B605 flow cell is unique for life sciences applications. Combining both a 4 pole conductivity sensor and the pH probe in the same flow cell for measurements pre and post column. Many separation processes requires precise and reliable measuring of conductivity with a range from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