

September 11th, 2012

Concentration measurement in beverage manufacturing

Inline measuring of wort, extract, alcohol and whey

Brand-specific taste and maximum production efficiency are two fundamental goals that one has to keep in mind in beverage manufacturing. Taste is influenced by many factors. According to whether it is about brewery, wine press house, dairy or juice and soft drink manufacturing, critical factors include the concentration of original gravity, alcohol, whey or sugar, which can all be controlled within the production process. The manufacturing process should be conducted as efficient and resource saving as possible. Therefore, it is necessary to minimize the use of resources under meeting the quality requirements.

With the help of inline analysis measuring technology, quality can be monitored continuously during the various phases of the beverage manufacturing process. In addition, an reproducible process management will enable the manufacturer to increase outputs and to save resources and energy costs. For this purpose, the inline analyzer “LiquiSonic[®]” from the company SensoTech can be recommended. Bypass-free and directly integrated into the pipeline, the sensor precisely measures the concentration. Thereby, sonic velocity is being used as measuring method. The measuring data is stable, reproducible and is being updated every second. The sensor fully consists of stainless steel and works maintenance-free, deposit-free and drift-free. Furthermore, various process connections, such as Varivent, DIN, Clamp, APV or hygienic fitting for dairy, are available.

The controller of the system manages and visualizes the measuring data. Through the connection with control systems, process monitoring is being integrated in the automatic controlling process.

In breweries, LiquiSonic[®] is applied for instance at the lauter tun, wort boiler and cooler, filter and filler. The sensor measures highly accurately the concentration of wort or alcohol, identifies phase transitions and controls blending processes.

Also in wine press houses, the LiquiSonic® sensor identifies continuously and with maximum accuracy the concentration of alcohol. Moreover, the sensor measures the extract concentration of wine for quality control and wine blending.

In dairies, the system monitors the concentration of milk during the membrane filtration and further serves the product and energy-optimized controlling of the whey concentration up to a dry matter content of 60 %.

In juice and soft drink manufacturing, a precise measurement of the extract or sugar concentration, respectively the Brix content, is realized by LiquiSonic® in order to produce reliable, quality-conscious and efficiently.

[Brau Bevale 2012, hall 6, booth 124](#)

Immersion type sensor and controller of a LiquiSonic® analyzer



SensoTech:

Since over 20 years SensoTech GmbH has been engaged in the development, manufacturing and sales of inline analysis systems for process liquids. With worldwide in-stalled, highly precise and innovative measuring systems for monitoring of concentrations, compositions and changes of chemicals as well as properties directly in the process, SensoTech has significantly contributed to the enhancement of the state of the art. In addition to the measurement of concentration and density, the phase interface detection as well as the monitoring of chemical reactions like polymerization and crystallization are typical applications. SensoTech inline analyzers set standards in the technological and qualitative valence, user friendliness and reproducibility of process values. Special calculation methods and sophisticated sensor technologies enable reliable and precise measuring results even under the most difficult process conditions.

The knowledge and the experiences of the highly motivated and committed SensoTech staff are the result of many different applications supported by well-known customers from the chemical and pharmaceutical industry, food technology, semiconductor technology, automobile and steel industry as well as many other industries. In addition, these experiences also open up unimagined solution possibilities for new measuring challenges.

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