Waldbrand Distillery monitors alcohol concentration using Teqwave

Simplified quality control in distilleries

Waldbrand GmbH, based in Wald in Bavaria, Germany, is a producer of high-quality distilled beverages.

"Teqwave enables us to measure the alcohol content of our products accurately and reliably. We are very satisfied with the measuring system. In particular, we appreciate the simple operation, automatic measurement of the actual alcohol content and convenient cleaning."

Ms. Carina Kain
Distiller
Waldbrand GmbH

Team – Waldbrand GmbH

Waldbrand Destillerie now uses Teqwave from Endress+Hauser as a measuring device for monitoring alcohol concentration that can compensate for cross-influences from sugar or mineral content, enabling automatic measurement of the actual alcohol content. Teqwave also meets the requirement of being adaptable to beverage-specific properties. This makes it possible to continuously determine the alcohol content of distilled beverages accurately, even in the presence of sugar/invert sugar, acids, etc.

The customer requirement

One of the core tasks in quality management of distilled beverages is determining their alcohol concentration before bottling to ensure consistently high product quality. Waldbrand GmbH had previously done this using a manual measuring procedure that required extensive manual calculations to correct the wrong alcohol concentration measurements due to errors caused by cross-influences of sugar and/or acid. This was a time-consuming and error-prone process. The challenge was to simplify the calculation of the actual alcohol concentration, which deviates from the apparent alcohol concentration in the presence of even small quantities of sugar. The manual measurement also required significant cleaning work after each measurement. This was the only way to eliminate the possible drift of measured values. Therefore, the distillery was looking for a robust measuring device that is easy to clean. For alcoholic beverages with sugar/invert sugar content, accurate and automated measurement of the actual alcohol content needed to be possible in the future as well.

Our solution

Teqwave from Endress+Hauser can ensure simultaneous measurement of alcohol and sugar/invert sugar concen-

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tration in distilled beverages in real time. The variety of preinstalled concentration data sets for different beverages enables plug-and-play measurements over a very wide range of concentrations and temperatures.

In addition, Waldbrand GmbH can adapt the concentration data sets on a beverage-specific basis and store recipes in Teqwave. This allows a compensation for additional cross-influences such as process pressure or acid on the alcohol content measurement, thus increasing the accuracy of the alcohol concentration measurement. This ensures consistently high accuracy and product quality, even under differing process conditions. The CIP capability of the sensor and the robust stainless-steel design without moving parts also enable simple cleaning in the process without removal.
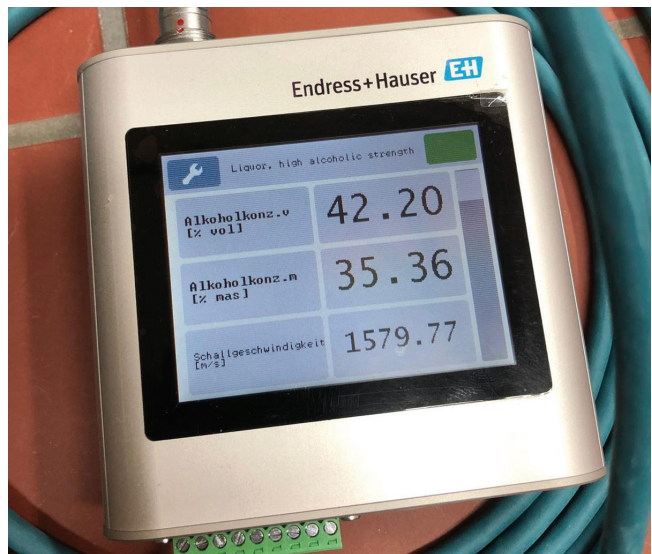
Device used
Teqwave I continuously measures the alcohol and sugar content of distilled beverages while taking various concentration data sets into account. These beverages include:
- Gin, rum, fruit spirits
- Single-malt whiskey with honey, etc.

The result
- Simultaneous and automatic concentration measurement of alcohol and sugar/invert sugar in distilled beverages with various concentration ranges thanks to preinstalled concentration data sets
- Increased measuring accuracy even for difficult applications thanks to product-specific recipes and compensation for cross-influences such as mineral content, acid, etc.
- Multivariable measurement for concentration of cleaning agents and disinfectants using only one measuring system
- Simple cleaning of the sensor in the process
- Reliable measuring performance with low maintenance effort

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