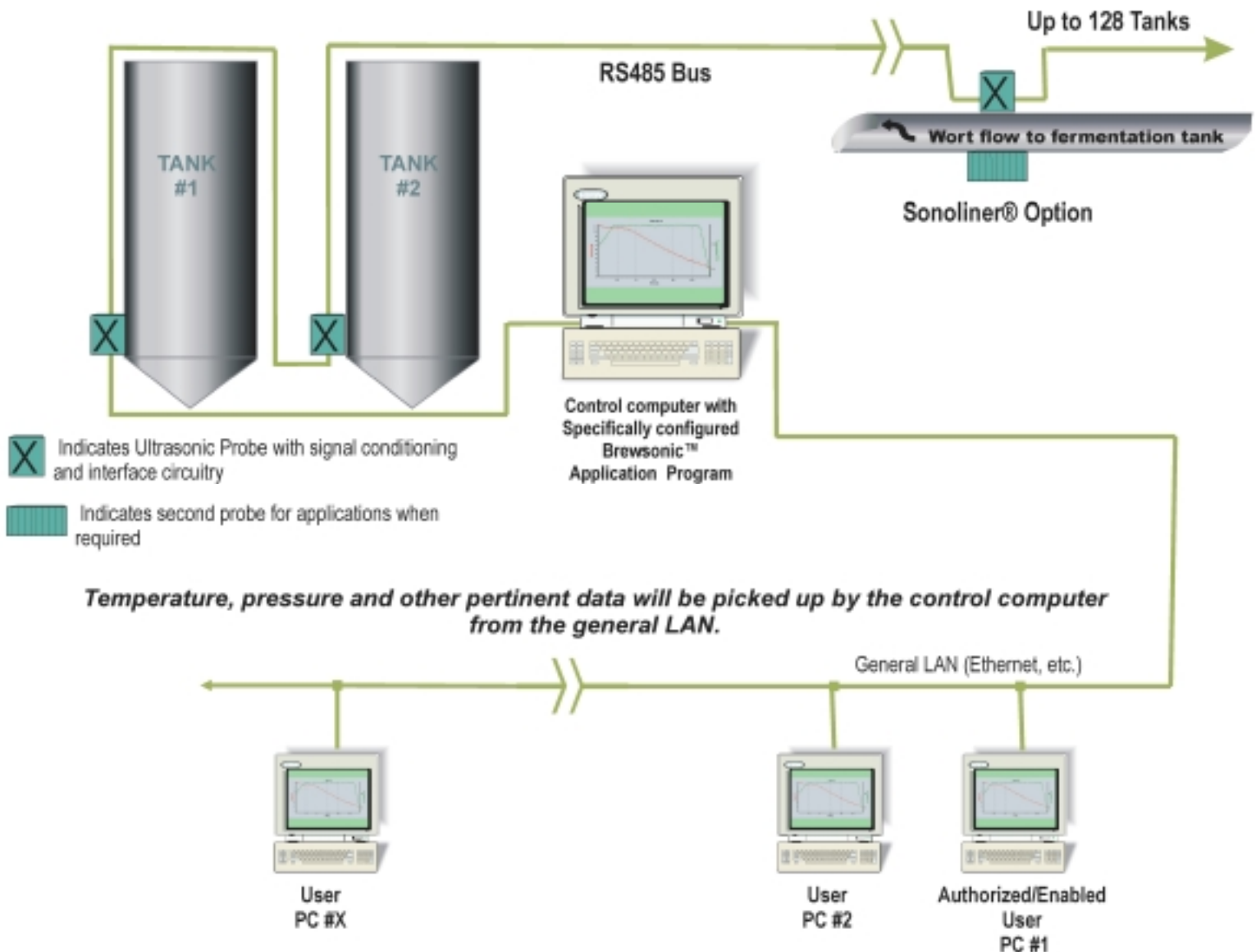


BREWSONIC™

Ultrasonic Data Acquisition System

A Non-invasive Liquid Density Measuring Method
For Fermentation Applications in the Beverage Industry



- ☆ Brewsonic™ was developed in Germany in cooperation with the Brewery college of the Technical University of Munich-Weihenstephan.
- ☆ Brewsonic™ eliminates the need for manual sampling and laboratory analysis costs.
- ☆ Brewsonic™ increases product output with the "Predictor" module, which aids in capacity planning. The real-time data acquisition capability results in cost savings by eliminating cooling energy expenses.

☆ *Over time, Brewsonic™ pays for itself AND guarantees consistent product quality!*



Brewsonic™ General Facts

Every brewer wants and needs online, real-time data collection and display of extract values during fermentation. This feature is a most important part of the M.I. System. The Brewsonic™ Ultrasonic Non-invasive Data Collection Method, combined with the brewing specific application software program, provides this precise feature.

An ultrasonic transducer combined with a microprocessor-based control and interface module (EMK) is affixed (cemented) to the external fermentation tank wall. An ultrasonic pulse is then sent thru the extract and the resulting echo (signal speed and attenuation) is evaluated by the EMK and passed to the dedicated control PC via RS485, where the data is integrated with temperature and pressure values obtained from the general LAN. Utilizing these data and values, the Brewsonic™ application program establishes a data point on the graphic display. Pulses are sent in 60-second Intervals to establish a graph with high resolution over the entire fermentation process.

Features and Benefits

- * Brewsonic™ specific application software is a patented system based on known principles combined with a novel methodology.
- * The non-invasive principle enables the system to be totally hygienic and therefore perfectly suited for food and beverage applications. No agency approval for use of the system will ever be required.
- * The system is installed with minimal effort on new or existing fermentation tanks. No process interruption is necessary during system installation.
- * Utilizing ultrasonic penetration analysis of liquid density characteristics, the Brewsonic™ system presents drift-free, realtime data.
- * The Brewsonic™ specific application software program not only provides the brewing industry with realtime automatic fermentation analysis, but also, an optional "Sonoliner™" program provides density data of wort flowing into the fermentation tanks. "It is fermentation that makes beer beer."
- * The system is highly reliable and requires no maintenance. After an initial calibration phase, Brewsonic™ operates fully automatically without any sensitivity changes, signal drift or output degradation.
- * Since "Nature" is not always consistent, variations in raw material may require some system re-calibration. An optional software module 'auto-calibrate' will automatically re-calibrate the process after one input of offline data.
- * Continuous real-time data collection results in visual process display graphics.
- * Process deviations can be instantly recognized, enabling corrective measures to be taken in a timely fashion, thereby enabling process optimization.
- * Corrective measures instituted in a timely fashion produces consistent quality of product.
- * Real-time data display leads to maximum plant capacity utilization, by virtue of realistic event scheduling. In addition, the optional software module 'Predictor' will enable further process scheduling 36 hours prior to the conclusion of the fermentation process.
- * Since Brewsonic™ collects data automatically, all routine manual sample collection and laboratory analysis is eliminated.

**For All Your Industrial Automation Requirements,
THINK HMW!**

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