

Superior Instrumentation, Best Practices – Better Brewing

In the Brewery, you are constantly challenged to maintain a high quality, consistent product, while under constant pressure to reduce operating and energy costs. Emerson understands these challenges and has the most powerful, reliable instrumentation with the know-how to implement them in ways that assure that you can brew the quality beer that your customers expect while increasing brewery efficiency to new levels.

- 1 Silo Level**
Rosemount 5600 Radar
- Non-Contacting Radar
 - Reliable continuous grain level
 - ±10mm accuracy



- 2 Brewery Temperature**
Rosemount 644
- Precise, stable temperature measurement throughout the brewery
 - 0.03% accuracy, 2 year stability
 - Direct mount RTD's and Thermocouples
 - Mash and Brew kettle temperature control
 - Fermentation and filler bowl temperature



- 3 Steam Energy Measurement**
Rosemount 3095 MFA Mass Probar
- Measures energy use throughout brewery
 - P/DP/T multivariable measurement in one unit
 - Accurately measures steam mass flow to 1% by compensating for Pressure and Temperature



- 4 Mash and Wort pH**
Rosemount Analytical TFS396 pH Sensor
- Non-glass ISFET sensor
 - Mash pH optimizes enzymatic conversion of starch to sugar
 - Wort pH determines hops solubility, body, palate and clarity



- 5 Water, Mash, Wort and Beer Flow**
Rosemount Magnetic Flowmeters
- Most widely used flow technology in the Brewery
 - Cost efficient, low maintenance
 - Accuracy to .25%
 - Full diameter with no product shear and minimum foaming



- 6 Spent Grain and Brewing Solids**
Rosemount 3300 Guided Wave Radar
- Unaffected by stem in vapor space
 - Responds to rapid changes in level
 - Single rigid lead minimum effects of build up on the probe



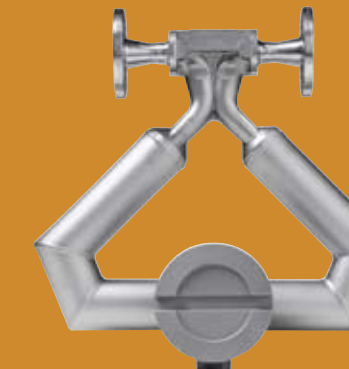
- 7 Filter Bed Differential Pressure**
Rosemount 3051S DP Level
- Precisely measures DP across the filter bed
 - DP flush mount remote seals and tuned capillaries
 - 5 year stability



- 8 Wort Mass Flow and Density**
Micro Motion CMF 100 Coriolis Flowmeters
- Mass flow accuracy to 0.1%
 - Real-time concentration (Plato and Balling) to 0.2%
 - First Wort clarity
 - Bed Consistency
 - Lauter Tun run-off



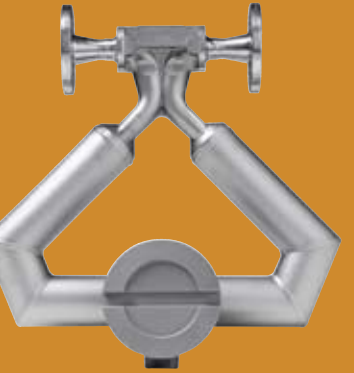
- 9 Adjunct and Extract Flow**
Micro Motion CMF 050 Coriolis Flowmeters
- Mass flow accuracy to 0.1%
 - Precisely measures expensive ingredients
 - Real-time concentration (Brix or % Sugar) to 0.2%
 - Directly measures sugar content of adjunct syrups



- 10 Tank High / Low Level**
Rosemount 2120 Vibrating Fork Level Switch
- Reliable "drip fork" design is virtually unaffected by flow, turbulence, bubbles, foam, vibration, solids content, coating or product variations
 - No need for calibration and minimum installation requirements
 - Sensitive, reliable and universal



- 11 Yeast Pitching**
Micro Motion CMF050
- Precision measurement of yeast to maximize conversion of sugars to alcohol
 - Density measures yeast solids
 - Density accuracy to 0.0005gm/cc



- 12 Tank Level**
Rosemount 3051SL Sanitary Level
- Most accurate and responsive level transmitter with direct or remote mount seal
 - Manufactured to withstand CIP/SIP and spray balls
 - Robust design for years of superior performance



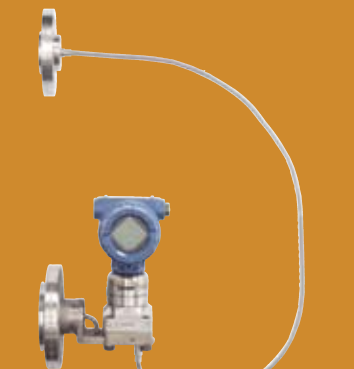
- 13 Beer Dissolved Oxygen**
Rosemount Analytical Bx438
- Directly measures DO in final beer
 - Range 0-20 ppb
 - Robust membrane survives multiple CIP cycles
 - No CO₂ offset effects



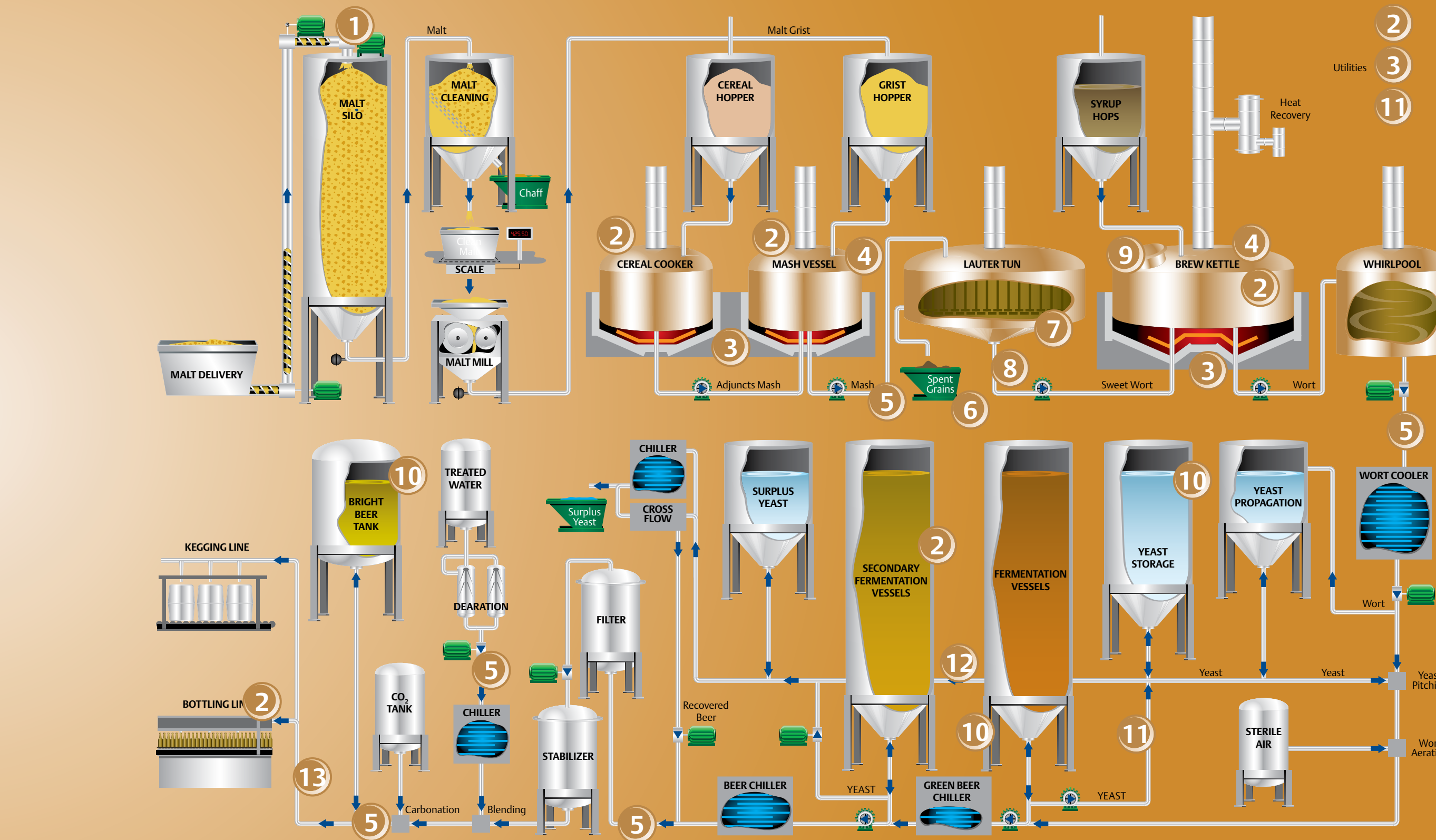
- 14 Boiler Efficiency and Stack Monitoring**
- Continuous real-time monitoring for boiler optimization and stack emissions monitoring
 - O₂, NO_x, CO, CO₂ and SO₂



- 15 Boiler Drum Level**
Rosemount 3051S DP Level
- Increases availability by decreasing shutdowns
 - Unmatched accuracy and 5 year stability
 - Adjustable damping for noise cancellation



- 16 CIP Conductivity**
Rosemount Analytical 225 Toroidal Conductivity Sensor
- Precise conductivity measurement determines strength of CIP solution
 - Senses transitions between CIP stages



Visit www.emersonprocessmanagement.com to learn just how Emerson can help you achieve better brewing.