CIP – Clean in place sensors

Food safety with maximum overall equipment effectiveness.

Your benefits at a glance.

Reduce CIP operation costs
- Efficient resource and material utilization
- Higher productivity

Food safety
- Precise cleaning process control and process safety with sensors
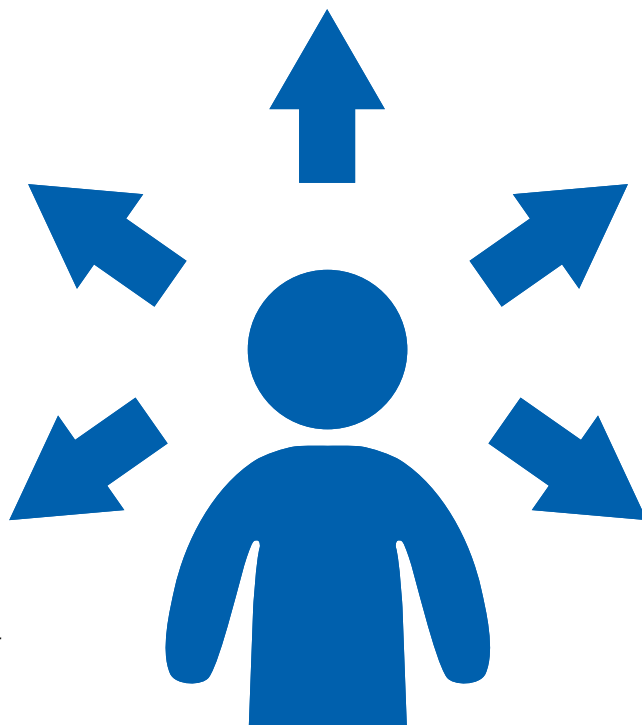
Simplify CIP system
- Easy sensor configuration, ready to fit process adapters and design variants

Support from an experienced partner
- Clear and field proven status indication using your individual terminology

Support from an experienced partner
- Convenient sourcing from a comprehensive portfolio, access to premium sensor technology knowhow

The perfect solution for your application.

1 Concentrate dosing of chemicals

To control concentrate dosing of acid or caustic substances, the conductivity sensor *CombiLyz®* measures the specified concentration. With precise measurement it ensures food safety and savings of cleaning agent usage. Due to its robust hygienic designed tip, it survives with a long life cycle.

2 Phase separation of detergents & water (CIP steps)

To control the CIP process steps the conductivity meter, installed in the return line measures the different conductivity values of the medias. The robust one piece design sensor tip of the *CombiLyz®* increases the life cycle and safes maintenance costs. This one piece design has the fastest temperature compensation response time for on the market today and ensures fast and accurate communication to the PLC. This can help optimize your CIP process and save water, product and chemicals. Checkout how much media you can save with the CIP calculator on our webpage.
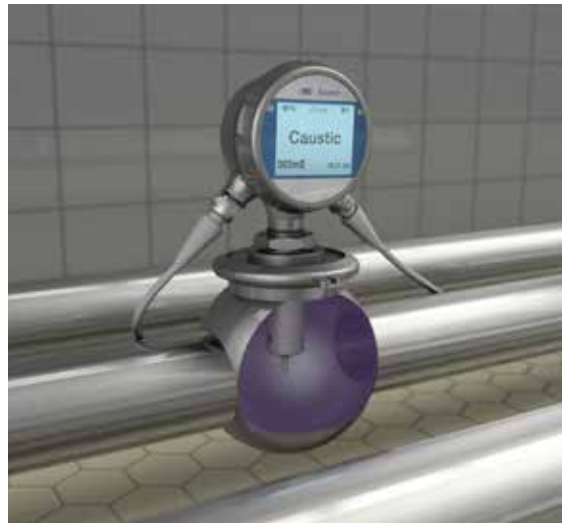

Saving calculator CIP

1.0% accuracy and a fast temperature compensation of less than 15 s is why the *CombiLyz®* conductivity sensor is the most cost-efficient and reliable CIP process control on the market. EHEDG and 3-A certified, in a robust one-piece design with sensing part made of PEEK and housing of stainless steel. The innovative conductivity sensor *CombiLyz®* clearly stands out from any other product on the market. To find out your cost savings potential based on the short reaction time of the *CombiLyz®*, add in your current CIP parameters in the calculator at www.baumer.com/CIP.

3 Tank temperature monitoring

To ensure optimum cleaning effect, the temperature of the detergent inside the tank must be precisely monitored in order to realize a constant quality of cleaning process and food safety in the end. Baumer offers a variety of different temperature sensors to solve this application.
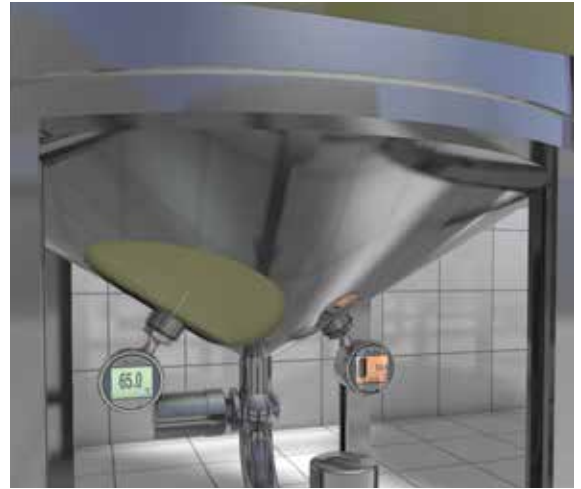
4 Level point detection

Fast and reliable sensor to detect the maximum and minimum tank levels. The level switch *CleverLevel®* can be used in all harsh environments and media. Can be set-up to ignore or detect foam.

5 Continuous level measurement

To measure continuous level of liquid in the tank, Baumer offers a variety of sensors for all needs. With hydrostatic technology the PLC will receive constant level information even under extreme temperature conditions up to 200 °C in permanent operation.

6 Pump dry run protection

The level switch *CleverLevel®* protects the pump from running dry during filling and emptying of the tank or pipe. Especially in processes where foam can occur the sensor must decide if the media is just foam or liquid. Conventional sensors have problems detecting these conditions.

7 Regulation of flow velocity – heating cycle

For precise regulation of temperature in the cleaning cycle, it is importent to measure flow velocity and temperature in the hot water cycle. With the Baumer *FlexFlow* your can measure both flow velocity and temperature with on sensor. This reduces the overall installation costs.
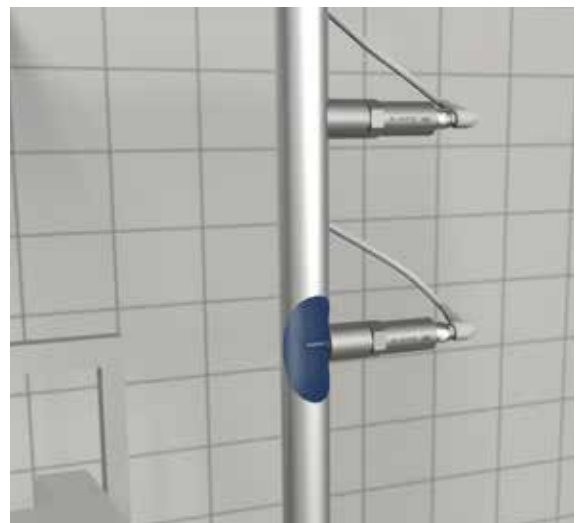

8 Pump pressure measurement

Perfectly hygienic designed and robust against pressure peaks. Baumer offers the right pressure sensor to regulate the pressure pump. This gives you the possibility to indicate a pressure loss in order to plan maintenance for your pump in advance.

9 Flow measurement in the CIP supply

The flow and temperature sensor *FlexFlow* monitors the pre-defined flow rate and temperature of the cleaning agents throughout the entire CIP cycle which ensures optimum cleaning effects and maximum food safety.
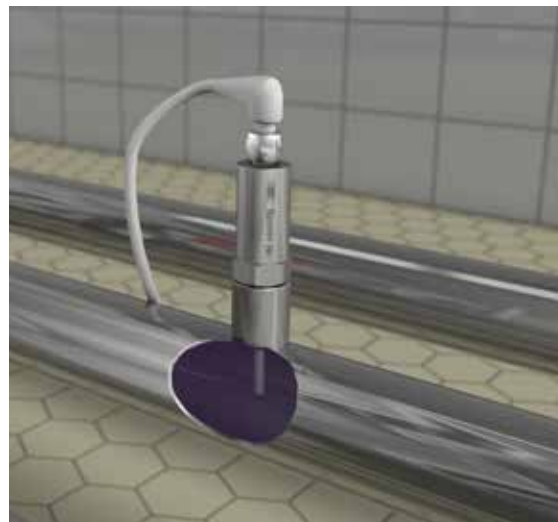
10 Temperature control for the CIP supply

Temperature is a critical parameter in the CIP process. Therefore we use the temperature probe TER8 after the heater in the cleaning pipe to regulate the correct temperature. The PEEK insulation minimizes the influence of the ambient temperature and gives you a maximum of food safety and at the same time a higher efficiency.

11 Flow & temperature control of the CIP return pipe

The flow speed & the temperature of the media pumped through the CIP cycles is an indication of the effectiveness of the cleaning performance. Too low flow rates causing less mechanical turbulence in the pipe to clean dirty spots. Too high flow rates limits the cleaning time or increases the waste of media. To low cleaning temperature can increase the risk of keeping bacteria and microorganisms in the cycle and not be safe. The *FlexFlow* measures both, temperature and flow velocity and therefore avoids an additional sensor installation which causes higher installation and maintenance costs.
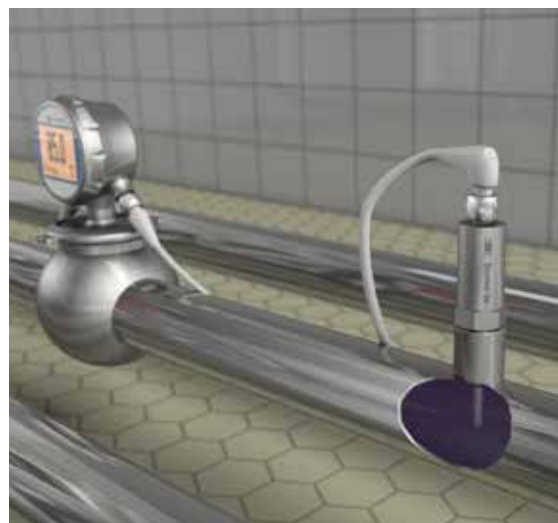
CIP sensor portfolio.

Conductivity

- Robust one-piece design PEEK sensor element
- High accuracy < 1.0% with fast response time
- Measuring range 50 µS ... 1000 mS
- Display with additional concentration value

Temperature

- Wide range of sensing elements (e. g. front-flush)
- High accuracy < 0.1 °C with fast response time
- Measuring range −50 ... 150 °C
- Optional display with selectable backlight color alarm

Point level detection

- Self draining, less invasive one-piece sensor tip
- Reliable switching independent of foam and adhesives
- One sensor type for all media
- Bright blue LED status signal

Continuous level measurement

- High temperature shock resistant
- Excellent temperature compensated accuracy < 0.1%
- Measuring range down to 1 m (0.1 bar)
- Optional display with tank visualization

Flow measurement

- CIP & SIP-capable without restrictions up to 150 °C
- Wide measuring range up to 400 cm/s
- Flow and temperature measurement in a single sensor
- Optimal installation in any position

Process connections & accessories

- Connections in hygienic design and free from maintenance
- Standard and brand compatible adapters
- Clamp, nut, threaded and welded types
- 3-A designs with leak detection wole

All housings in stainless steel with IP 67 or IP 69K. Various signaling interfaces selectable (4 ... 20 mA standard).

Compliance and approvals

Baumer products meet international industrial standards. Where appropriate or selected by options, they are FDA compliant, fulfil the requirements of the respective 3-A Sanitary Standards or comply with EU regulations 1935/2004, 10/2011 and 2023/2006. In addition certain products are EHEDG certified. For hazardous environments you have a choice of ATEX approved products. Please refer to the related data sheets for details.

Overflow protection and leakage monitoring (detection), compliance to Water Resources Act certified by Dibt

IO-Link – Industry 4.0 and IoT ready.

IO-Link is a global communication standard for sensors. It allows sensors to be adjusted quickly and easily for applications using standard network components. In addition, IO-Link offers the possibility of providing additional data, e.g. for predictive maintenance processes.

Your benefits at a glance

Automated sensor configuration (parameterization)
- Fast and easy sensor setup thanks to automatic configuration
- Application parameter setup allows you to swap products quickly
- Convenient configuration of hard-to-access sensors

Process safety due to proactive maintenance / status monitoring
- Efficient maintenance and repair intervals thanks to the ability to define individual parameters (e.g. contamination threshold) in the sensor

Simple and affordable
- Simplified in modular cabling
- Connectivity components

For more information about CIP sensors go to
www.baumer.com/CIP

Find your local partners at: www.baumer.com/worldwide

Baumer
Passion for Sensors