SENSORS FOR FOOD AND LIFE SCIENCES.

HYGIENIC BY DESIGN
ANDERSON-NEGELE

Sensor Technology for the Beverage Process

- TEMPERATURE
- PRESSURE
- LEVEL
- POINT
- FLOW
- CONDUCTIVITY
- TURBIDITY
- WEIGHING SYSTEMS
- PROCESS ADAPTERS

How can I optimize my beverage production with Anderson-Negele instruments?

How can I avoid waste with sensing technology?

What can digitalization with IO-Link do?

How can hygienic design help in product quality and safety?

ANDERSON-NEGELE.COM

How can I optimize my beverage production with Anderson-Negele instrumentation?

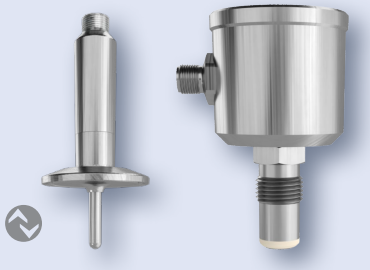
Intelligent sensing technology can help you ensure **reproducible product quality** throughout the production process, automate processes, minimize energy and resource consumption, and avoid production downtime and food waste.

As diverse as raw material quality, recipes and processes in beverage production are, so are the demands on measurement technology. That's why we offer a **complete sensor program,** each with a wide range of variants and options. You get **exactly the performance you want** for every application and every business type, from regional producers of specialty juices to industrial soft drinks bottlers – no more, no less.

Our tip: Check which of the applications in this overview you use in your operation, take a look at the product portfolio we offer from a single source, and build your "dream sensor system". We will be happy to help you find the optimal solutions.

Temperature

They are indispensable in almost **every step** of beverage production and for CIP control. That's why we offer them in 2 standards (Big and Mini), with a **comprehensive performance range** and an almost infinite variety of **configurations, process connections, and options.**



TSMF / TSBF

- ✓ For vessels and pipes from DN25
- ✓ Flush design available
- ✓ Accuracy < ±0,1 K
- ✓ Extremely robust and permanently precise
- ✓ Optional programming display

Pressure

Keep **optimum control of process or vessel pressure** at all times. Many sensor options provide the most suitable solution for **every application, every requirement and every desired pressure measuring range**, be it as an on-site display or for PLC connection.

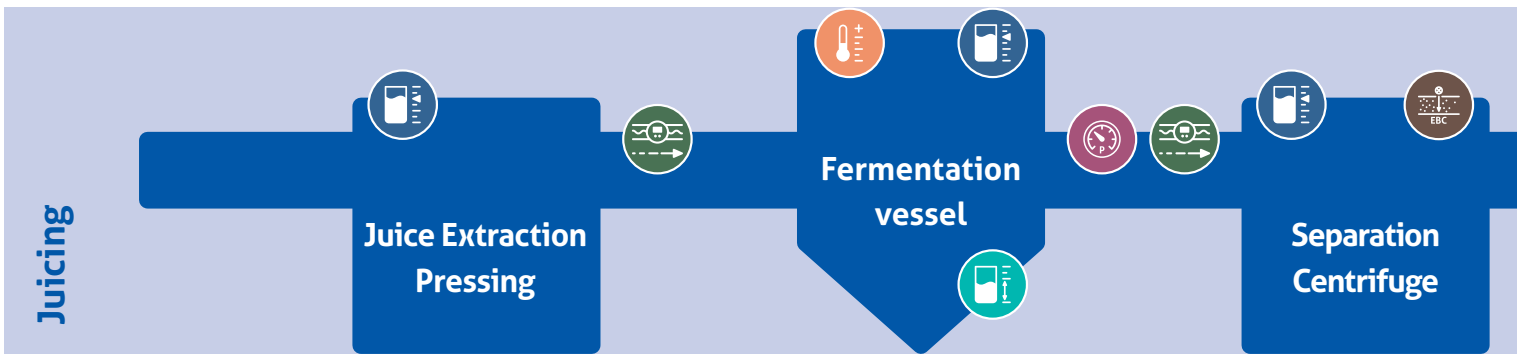
Transmitter: P41 / P42

- ✓ Extremely robust, even with pressure shocks
- ✓ Absolute, Relative or Compound measurement
- ✓ Temperature compensated

Gauge: EL

- ✓ Extremely robust, even with pressure shocks
- ✓ Accuracy up to ±0,25 %
- ✓ 90 mm display
- ✓ Two-point adjustment

From the fruit, vegetable or cereal to the consumable juice, wine, plant-based milk or concentrate for further processing.



Level

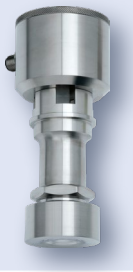
Different temperatures, different vessel shapes, sometimes pressurized, different densities, differently foaming media, different turbidity and solids contents - highly **different requirements and dynamic changes** influence the control of the filling level of your various vessels and containers. However, at all times you need to know exactly **how much product is in the vessel** or ensure that a **vessel does not overflow or run dry.**
That's why we offer **different measuring techniques and many different designs and options**, so that you get the best solution for every purpose and application.

Hydrostatic:
L3

- ✓ Always precise due to significantly reduced temperature effect
- ✓ Direct output of volume, level or pressure
- ✓ Integrated tank linearization and density compensation

Potentiometric:
NSL-F / NSL-M

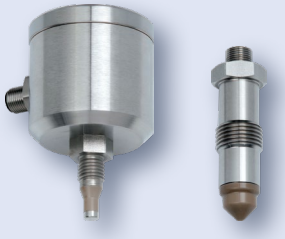
- ✓ Highly accurate even with foam, pasty or adhering media
- ✓ Installation from the top, below, or side, rod can be adapted to vessel shape
- ✓ Also for pressure vessels and up to 3 m



Hydrostatic:
LAR

- ✓ Climate-resistant, hermetically sealed measuring system
- ✓ No drift problems due to condensation
- ✓ Accuracy ≤ 0.075 %

Point Level



Capacitive: NCS / Conductive: NVS

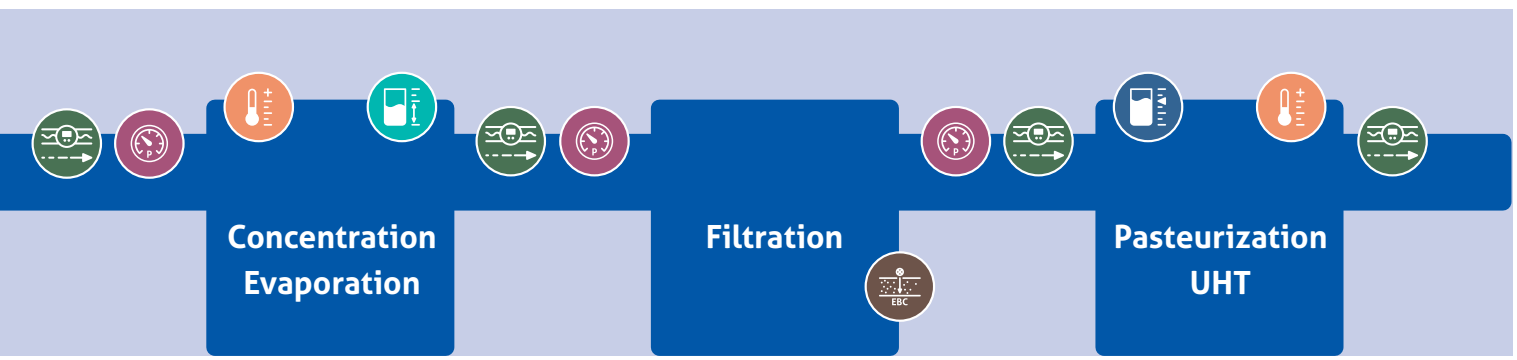
- ✓ Reliable point level control even with foamy or viscous media
- ✓ Hygienic installation on top, below, or side
- ✓ Very fast reaction time
- ✓ Also for double-walled vessels
- ✓ Optional heating to avoid condensation

How can I avoid **waste** with sensing technology?

For a producer, this not only means an **ecological and ethical** component, but also **pays off in hard cash.** Every liter of wasted resources means lost value. And every liter of product that ends up in the gutter even causes additional expense in wastewater treatment.

Areas where **intelligent instrumentation can help prevent losses include,** in particular, phase transition between two media, insufficient product quality due to processes that are not optimally controlled, inaccurate level control in storage or process vessels, and a CIP process that is not automated.

Our tip: Examine all your processes for their optimization potential. We will be happy to help you on site.



What advantage do remote sensors offer me?

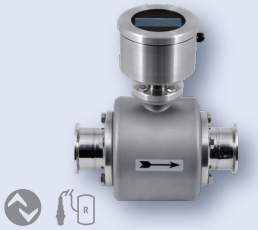
Many of our sensors are available as "remote" version. The actual measuring device and the electronics unit with operating display are separated. This **protects the electronics from vibrations and high temperatures** and can significantly increase the service life. It is also extremely practical, as you can simply place the electronics and displays where it is most **convenient and accessible for easy and quick reading or programming.**

Our tip: Get the perfect overview of all processes and containers without having to bend down or walk around and ensure easy programming and longer service life with remote sensors.

= Remote version available

Flow Meters

Here's how to **keep control** of your beverage recipes, monitor your blending, and ensure the **reliable operation** of your plant: **Precise flow control** with electromagnetic flow meters.

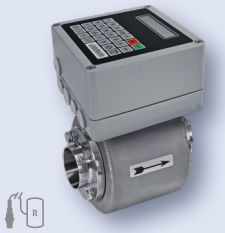


FMQ

- ✓ Compact, robust, low-cost all-arounder
- ✓ Measuring range 30 l/h to 280000 l/h (8 gal/hr to 74000 gal/hr)
- ✓ Measuring accuracy ±0.5 % ±2 mm/s
- ✓ For process temperature up to 165 °C / 325 °F (Remote), CIP up to 130 °C / 266 °F (30 min.)

FMI

- ✓ High-end version for highest demands
- ✓ Measuring range 30 l/h to 280000 l/h (8 gal/hr to 74000 gal/hr)
- ✓ Measuring accuracy ±0.2 % ±1 mm/s
- ✓ For process temperature up to 165 °C / 325 °F (Remote), CIP up to 130 °C / 266 °F (30 min.)

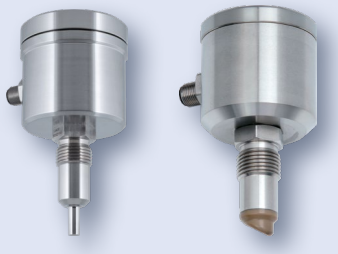


IZMSA

- ✓ Certifiable, with Certificate TC7520 (2014/32/EU)
- ✓ Many options for optimized filling applications, e.g. for Kegs
- ✓ Technichal specifications see FMQ

Flow Switches

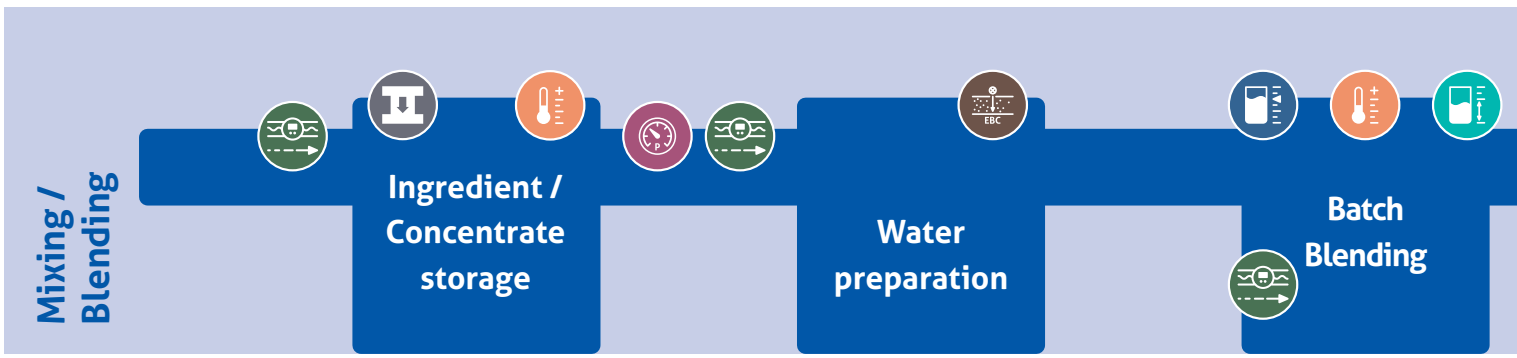
Flow monitors give an alarm when the flow stops and are **ideal for monitoring** pump systems, filters, cooling circuits, the CIP return or for detecting misdirected media.



Calorimetric: FTS
Ultrasonic: FWS / FWA

- ✓ Measuring range 0.1...3 m/s
- ✓ Very short response time
- ✓ Temperature compensated
- ✓ Thanks to different technologies the right solution for any, even high-purity, media

From the concentrate to the consumable soft drink, sport drink, ice-tea or other drink



Turbidity

The **clarity of a beverage** or its **natural turbidity** are **deliberately defined quality characteristics.** Do you want to safeguard your product quality by precisely monitoring the degree of turbidity? Control your separator optimally? Supervise the function of your filter systems? Reuse slightly contaminated CIP media and thus save costs? Minimize wastewater costs through contamination monitoring?
Then our turbidity sensors are **your perfect solution.**

ITM-51

- ✓ Front-flush design with backscatter light technology
- ✓ Easy installation due to screw or clamp connection
- ✓ Measuring range: 50...75 000 EBC
- ✓ High safety and durability due to glass-free sapphire optics

ITM-4

- ✓ Four-beam alternating light technology (90° scattered + 180° transmitted light)
- ✓ Measuring range: 0...1 250 EBC
- ✓ Measuring accuracy: resolution 0.1 %
- ✓ Response time < 1 sec.
- ✓ Many process connections from DN25 to DN100

Conductivity Sensors

For active, automated phase transition, control of the CIP return of acid / caustic / water and concentration control of the CIP cleaners: ILM-4, your **safeguard for process reliability.**

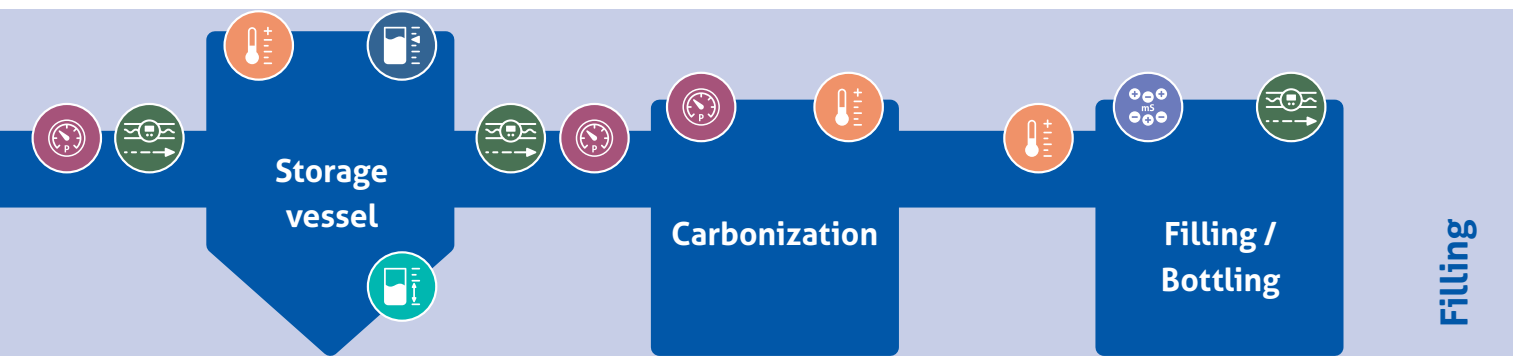
ILM-4

- ✓ Measuring range: ≤ 1... ≤ 999 mS/cm
- ✓ Sensor response time only 1.2 sec.
- ✓ Configurable from basic to high-end model
- ✓ Extremely robust and durable: 5 years warranty

What **advantages** does **sensing technology** offer in batch or continuous processes?

Every production process has its specific requirements. In **batch processing,** instrumentation in the process vessel is often in conflict with moving parts; here, factors such as installation situation, flushness, suitability for insulated tanks and vibration resistance are important. In the **continuous process,** sensors are your "eye in the pipe", your view into the process. Here, for example, short response times, adaptation to media changes or automated error alarms are important success criteria.

Our tip: Thanks to a large selection of sensor types and configuration options, our product range offers a suitable technology for most requirements and production methods. Tell us your specific application and we will be happy to help you select the best solution.



How can **hygienic design** help in product quality and safety?

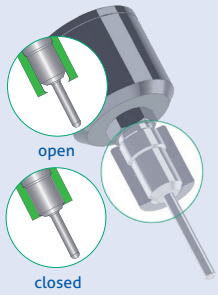
Anderson-Negele products are designed and built **exclusively for beverage applications.** Therefore, they meet the requirements for hygienic production, **certified** by 3-A and EHEDG. This means **maximum hygienic protection** of your products, easy **equipment cleaning**, and ultimately maximum **peace of mind for you and your customers.**

When it comes to process connections, we also offer a wide range of solutions that ensure hygienic integration into your plants through dead space-free design and superior material and surface quality.

Our tip: With CLEANadapt and FLEXadapt, we have specially developed process connection systems that simplify hygienic installation and operation and can even be retrofitted.

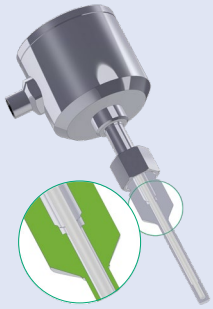
Process adapters

For a wide range of sensor types, our connection systems offer a **consistent hygienic installation concept:** High-quality stainless steel or PEEK for all wetted components, simple and secure screw connection or even installation in thermowells for sensor removal without disrupting the process.



CLEANadapt

- ✓ Installation in flow-optimized weld-in sleeves, pipe tees or adapters for existing process connections.



FLEXadapt

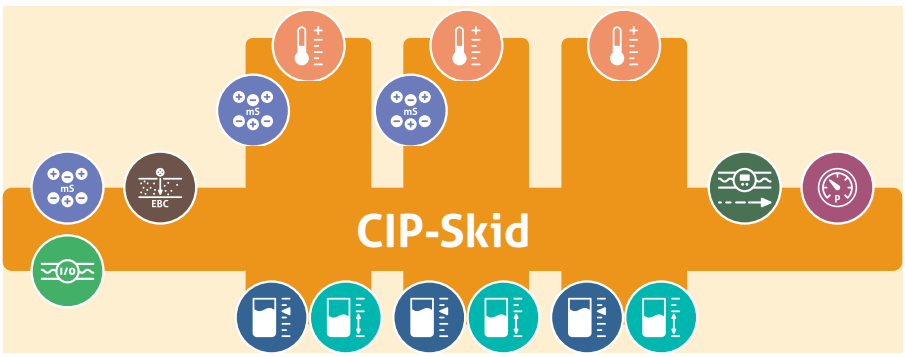
- ✓ Installation without media contact in a thermowell permanently welded into the process. Many sockets, adapters or pipes available.

Weighing Systems

Turn your vessel into a precision scale. When integrated level control systems fail, weighing systems come into their own. Load Discs give you **full control of the contents,** even with interchangeable containers for ingredients or additives.

Load Disc

- ✓ For loads from 100 kg to 10 t
- ✓ Measuring accuracy 0.03 %
- ✓ Long service life
- ✓ Individually configurable



What can digitalization with IO-Link do?

Most Anderson-Negele sensors with IO-Link are equipped with **"Flex-Hybrid Technology"**, i.e. **digital IO-Link and analog 4...20mA communication in parallel.** Even if the plant is operated analog, you can commission all sensors with only one software via computer. Specific programming can be easily transferred to other sensors by copy-paste. And in the case of a sensor exchange, the entire individual programming is transferred simply by plugging it in.

Our tip: With Flex-Hybrid Technology, you already have advantages in installation and commissioning. And if you switch to digital IO-Link technology later, there is no need for new sensors.

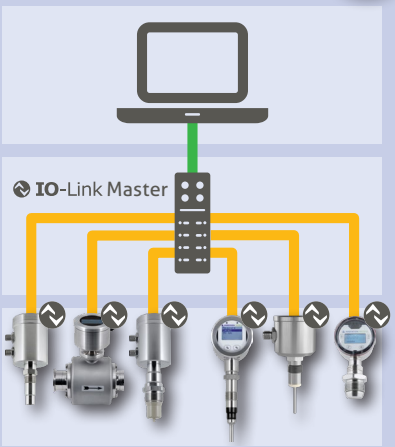
= IO-Link version available

IO-Link

Your key to greater efficiency: sensors with IO-Link in Flex Hybrid technology. These make **planning, commissioning and operating** your plants **easier, faster and more flexible.** For **existing analog plants**, Flex-Hybrid means easier programming, sensor changes with "plug-and-play", and if you upgrade to IO-Link control at some point, the sensors are changed over just by plugging them in.

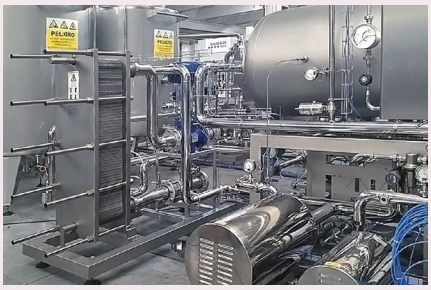
- ✓ Extensive sensor program for almost all measuring categories
- ✓ Only one software for programming and configuration
- ✓ Suitable for all IO-Link masters
- ✓ Add-on instructions (AOI) available
- ✓ The programming is automatically transferred when the sensor is replaced

More info at www.io-link.com

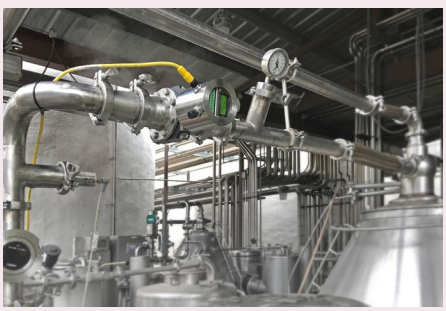


And does all this really work in practice?

Many customers use our sensors under a wide **variety of everyday requirements.** Discover how other beverage producers are successfully overcoming their challenges with Anderson-Negele sensors. Our **case studies show examples** where we have been able to help our customers achieve their goals through application consulting, product testing or technical support. You can **find our case studies** and application reports online here: https://www.anderson-negele.com/uk/food-beverage/



Our tip: Our case studies can give you a small overview of the variety of applications where intelligent sensor technology, used correctly, can make your work easier, improve quality and reduce costs. We would be happy to visit you to find answers to your questions on site. **Please contact us!**



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Find more details about our products and practical applications

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Consult videos about the installation, commissioning and operation of our sensors

= Product category online link

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