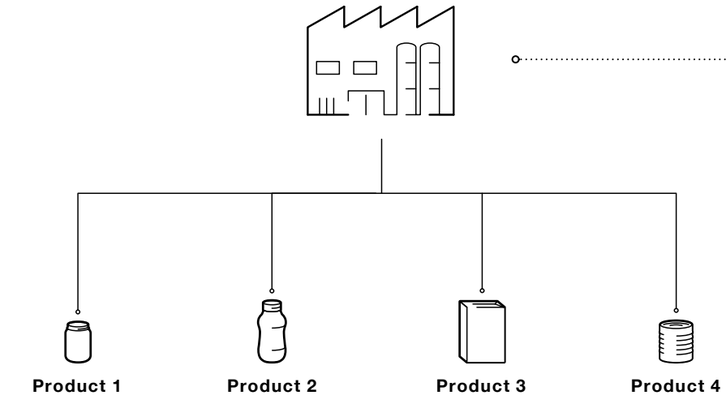
Dosing food oil smoothly within a shorter time

bürkert

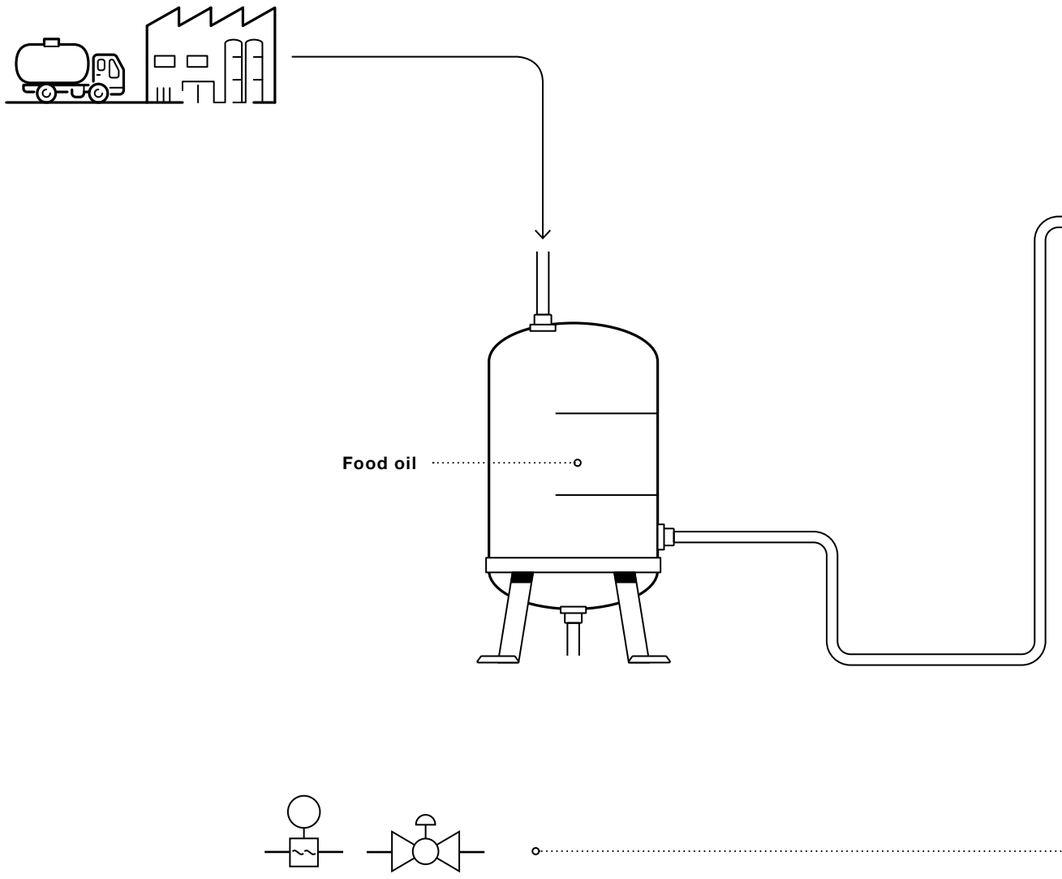
/ Reliability is the key ingredient / In the industrial production of food, high-quality ingredients and uniform recipes ensure a consistent product result. This is important because this product result is also a taste sensation. Whether it's baby food in a glass or remoulade in a tube: Businesses and customers expect each new batch of your product to taste exactly like the previous one. A flowmeter helps you ensure this by controlling the precise dosing of food oil.

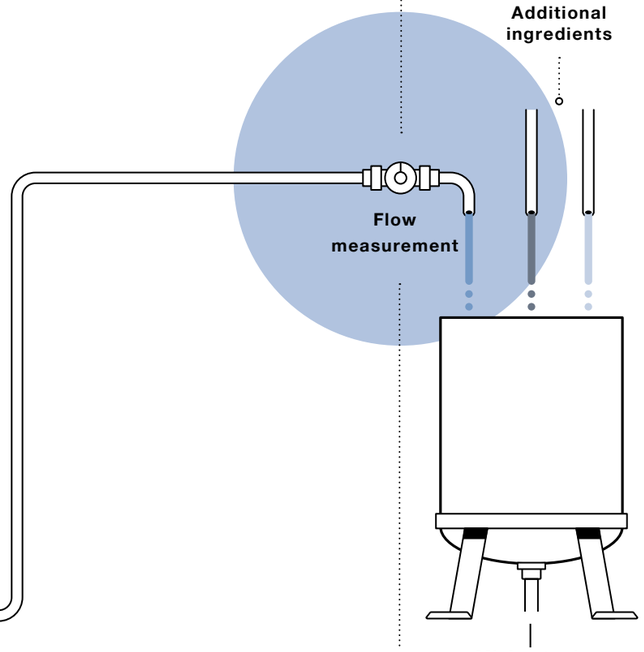
A food producer doses food oil from the storage tank to the impeller type mixer. The challenge in this batch process is to ensure that neither too little nor too much oil flows because the recipe also changes the taste of the final product.

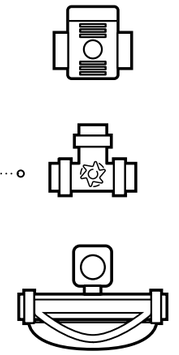


Do you want to measure and control the flow of your food oils exactly? Read the following pages to discover how easy this can also be done in your plant.

/ It is all about the quantity / Whether you are processing mayonnaise, potato puree or baby food: Your plant needs to measure and control the volume flow of food oil through the pipeline precisely.







Conventional solutions

Electromagnetic flowmeters (EMF) are not usually suitable: This is because the conductivity of many oils is too low.

Mechanical flowmeters – such as paddle wheels or oval gear meters – do not meet the hygiene requirements of the food industry.

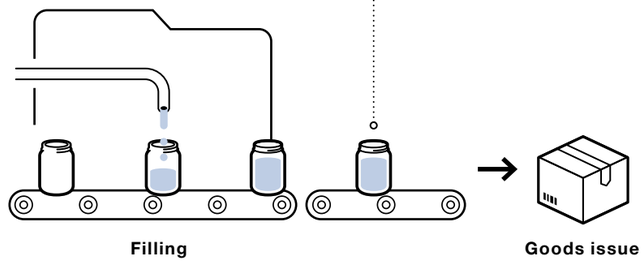
Conventional Coriolis measuring devices are less energy efficient due to the “tapering” of the pipeline. This is because the pump has to work harder to deliver the same quantity of medium through the thinner pipeline.

Teamwork

Sensor and valve must work as a team to ensure that exactly the required quantity flows.

Hygiene

Hygiene plays an important role in the production of food. This applies in particular to baby food.

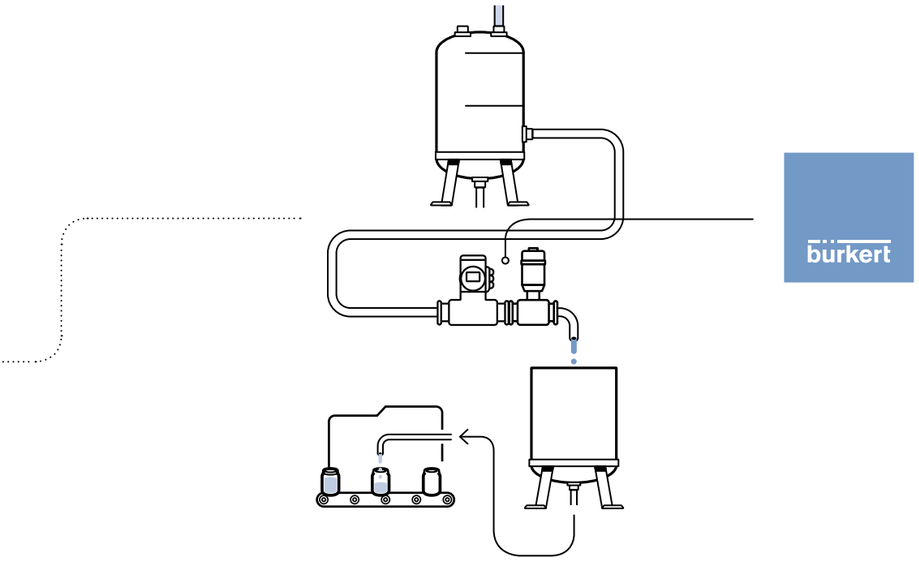


/ Hygienic flow measurement with SAW technology / For food producers, hygiene is the top priority. Thanks to our innovative SAW technology, the FLOWave sensor measures the volume flow not only under completely hygienic conditions, but also independently of the conductivity of the oil. The flowmeter made entirely of stainless steel does not require any sensor elements in the measuring tube. For you, this means no pressure loss, no maintenance expenditure and a simple cleaning process.

FLOWave

SAW stands for Surface Acoustic Waves. These occur in nature, e.g., during seismic activities. We harness their effect in our patented SAW technology for inline flow measurement.

/ Simply one tube / The complete FLOWave weighs only slightly more than three kilogrammes – a single person can install the handy flowmeter quickly and easily. It measures the volume flow hygienically and extremely precisely without the use of sensors that come into contact with the medium and independently of the conductivity. This saves you time and makes your plant more efficient.



Maximum precision

FLOWave measures the volume flow independently of the conductivity of the medium with an accuracy of 0.4 % of the measured value, the accuracy for the temperature is ≤ 1 °C.

Consistent processes and product quality

The “Acoustic Transmission Factor” function detects bubbles, particles or solids in the liquid. This allows the user to intervene quickly as soon as defined process variables are exceeded or undercut.

Easy to handle and install

The compact and lightweight flowmeter fits into every system and is easy to install. At two inches in size, a FLOWave device weighs just 3.4 kg – compared to the 70 kg heavy, two-inch Coriolis system.

Fit for the future

FLOWave devices utilise the Bürkert device platform EDIP. EDIP stands for “Efficient Device Integration Platform”. It considerably simplifies the handling of the devices and helps to integrate them quickly into an existing fieldbus system. In short: EDIP is part of our contribution to Industry 4.0.

Meets the highest hygiene requirements

FLOWave dispenses with sensors in the measuring tube that come into contact with the medium. It therefore measures the flow under completely hygienic conditions. This is confirmed by various certificates (ASME BPE, 3A and EHEDG).

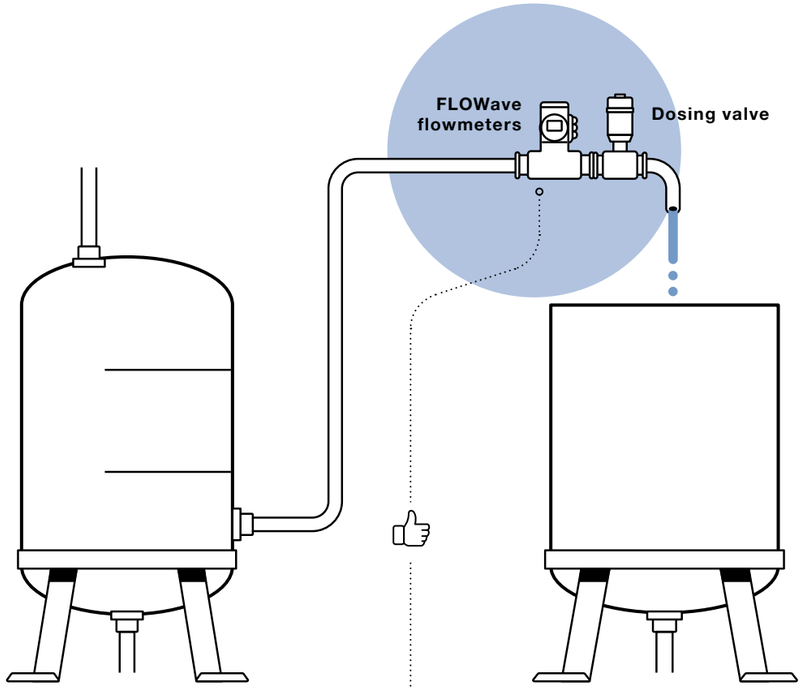
Less loss, more productivity

Thanks to the “density factor” function, FLOWave detects fluid changeovers very quickly and simplifies the separation of production steps. This reduces waste and costs while increasing productivity.

Fast start-up and easy operation

The high-resolution 2.4“ display offers flexible operation with intuitive, graphic user guidance. Freely definable measured value designations and the optional display of one to four measured values, a trend curve and the parameterisation interface enable an individually coordinated display. The WiFi module allows remote access to measurement parameters via web browser. This is particularly relevant when FLOWave is installed at difficult-to-access points in the process.

/ Systematic measurement / To ensure that the correct quantity flows, the sensor, dosing valve and controller must work in harmony. This is why Bürkert supplies you with a preconfigured system solution that you can simply integrate into your plant. No matter whether you install the system horizontally, vertically or at an angle – we will provide you with precise measurement results.



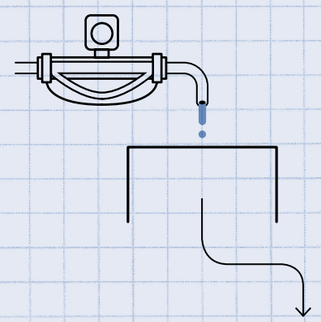
Flexible integration in your plant

To minimise any running-on of oil, the dosing valve should ideally be placed near the outlet. For exact measurement results, place the sensor near to the valve.

Example calculation

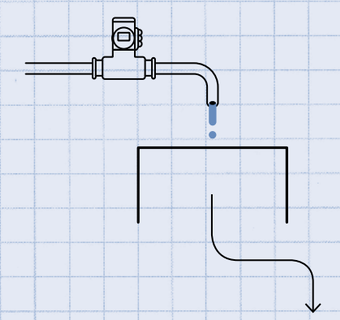
Measurably faster: How does flow measurement with FLOWave compare to a conventional Coriolis meter? A customer takes the test: Soya nut oil flowed through the plant in each case with a viscosity of around 100 mPa/s. In contrast to Coriolis, FLOWave performs measurements without tapering of the tube and therefore with no loss in pressure. **The volume flow is 30 times faster with FLOWave.**

Solution with Coriolis



Volume flow 0.06 l/s – **3.6** l/min

Solution with FLOWave

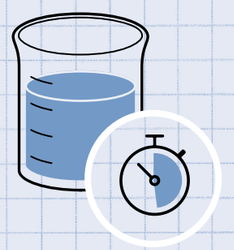


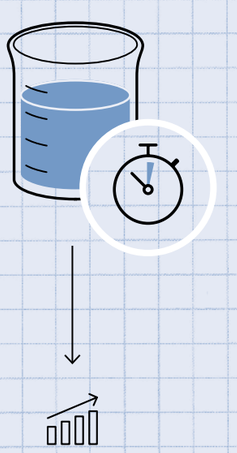
Volume flow 2.2 l/s – **132** l/min

Coriolis : FLOWave = **1:30**
The flow velocity increases
by a factor of 30 with FLOWav..

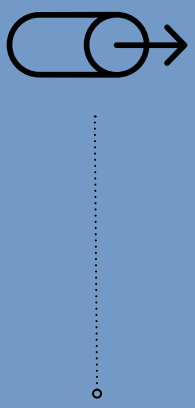
100 litres of oil = **28** minutes with Coriolis

100 litres of oil = < **1** minute with FLOWave





894590 | Version 07/2019 | Printed 07/2019



Flow measurement

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