Performance meets hygienic industry requirements: The new compact product line for level and pressure measurement

Endress+Hauser is developing a new compact product line for hygienic applications. The development focuses on the industry's requirements. The new products consist of three measuring principles for measuring pressure, continuous levels and point levels. They can be used in many processes in the life sciences sector. In this interview, portfolio and industry managers from Endress+Hauser explain how a small size can be combined with the highest performance without any compromise.

How does Endress+Hauser know the requirements of customers in the life sciences industry?

Klaus Köhler, Industry Manager, Life Sciences:
Endress+Hauser has been a reliable partner to the life sciences industry since the beginning of biopharmaceutical manufacturing in the early 1990s. Since then, we have adapted and expanded our measuring devices to this innovative market segment. Today, we are the market leader in many world regions and a full-service supplier in greenfield and brownfield projects. Thanks to our experience, we understand our customers need devices that combine maximum performance with a compact design. The new "Compact Line" combines maximum performance and reliability with very compact installation dimensions, making the devices available even for small production scales.

The new product line is designed to make a difference in terms of performance. What does ‘performance’ mean to Endress+Hauser?

Philipp Walser, Portfolio Manager:
At Endress+Hauser, we believe performance to be an overall package. This includes more than just measurement performance. Of course, this also plays an important role, but the overall package also includes important industry aspects such as ease of use, versatile digital connectivity, hygienic design and the provision of data for process optimization and predictive maintenance.

What role does hygienic design play for users in the industry?

Klaus Köhler, Industry Manager, Life Sciences:
In most applications, the life sciences industry goes well beyond the requirements of other hygienic applications such as those in the food industry. These are best summarized in the ASME BPE recommendations. Endress+Hauser has been an active member for more than 10 years. Since then, our devices have been specifically developed and manufactured in accordance with the ASME BPE recommendations.

Achieving exceptional performance requires good measurement performance. What does the new product line offer in this context?

Philipp Walser, Portfolio Manager:
The measurement performance of the new compact product line is at an outstanding level. Despite the small size, we didn't have to make any compromises. With the radar level measuring device, Micropilot FMR43, we can even measure in the smallest containers and cover measuring ranges of up to 15 meters. With this device, we attain faster measuring speeds than ever before, making it possible to achieve maximum accuracy even in media with turbulent surfaces. The cross-technological integrated Heartbeat Technology provides diagnostics, verifies performance and monitors all process data for predictive maintenance and process optimization strategies. This technology is particularly beneficial for radar measuring devices. With Heartbeat Monitoring, for example, foam can be detected on the medium and anti-foam agents can be used on-demand, leading to cost savings. With Heartbeat Technology and the Radar Accuracy Index (RAI), traceable verification in accordance with DIN ISO 9001 is possible. This is the basis for extending calibration cycles and reducing documentation costs. Verification is carried out on demand, in less than 3 minutes without dismantling or process interruption and with automatic documentation.

Explain the advantages of the compact size of the devices.

Klaus Köhler, Industry Manager Life Sciences:
The efficiency of biopharmaceutical production has increased significantly in recent years. System sizes have shrunk accordingly. Space is very limited, especially in the downstream process and in the seed train's first bioreactors. With compact sensors that still offer full functionality, the customer can use standardized device types in all scales of cGMP production and in process development. This simplifies the scale-up and scale-down process and minimizes the risk and effort associated with an excessive variety of devices. It goes without saying that the compact device family has been optimized to meet the needs of small containers, process connections and nominal pipe sizes. For example, the radar device with increased frequency can be installed via a smaller process connection. In addition, the state-of-the-art model-based firmware has been specially adapted to the typical challenges in small bioreactors - such as polished surfaces and foaming.

The new product line also includes radar measuring devices with different frequencies. Why is this necessary?

Philipp Walser, Portfolio Manager:
In level measurement technology, the trend is towards measurement with radar measuring devices. The technology has many advantages. For us at Endress+Hauser, it is important to meet the customer's needs in the best possible way. In addition to the proven 80 GHz frequency, the new compact radar measuring devices have a sensor variant with a frequency of 180 GHz. This innovative technology is especially suitable for particularly small tanks or containers with rapidly changing levels. It is important to us to offer our customers a tailor-made solution. For this reason, the new series will be available with two different frequencies.

The new product line has been developed to meet the industry’s needs. Can you give examples that illustrate this?

Klaus Köhler, Industry Manager Life Sciences:
As mentioned, our devices are developed and manufactured in accordance with ASME BPE recommendations. In addition to the usual requirements for "Design for Sterility", welding, dimensions and tolerances, the traceability of all components is also guaranteed. We also ensure that our products never come into contact with products of animal origin during manufacturing and can therefore guarantee the production of "vegan" devices. To prove suitability for biopharmaceutical processes under cGMP, we provide the customer with a comprehensive package of certificates.

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Compact design, full performance. Endress+Hauser boasts a new product line for continuous level, point level and pressure measurement in hygienic applications.

The Endress+Hauser Group

Endress+Hauser is a global leader in measurement and automation technology for process and laboratory applications. The family company, headquartered in Reinach, Switzerland, achieved net sales of more than 3.7 billion euros in 2023 with a total workforce of almost 17,000.

Endress+Hauser devices, solutions and services are at home in many industries. Customers thus use them to gain valuable knowledge from their applications. This enables them to improve their products, work economically and at the same time protect people and the environment.

Endress+Hauser is a reliable partner worldwide. Its own sales companies in more than 50 countries as well as representatives in another 70 countries ensure competent support. Production facilities on four continents manufacture quickly and flexibly to the highest quality standards.

Endress+Hauser was founded in 1953 by Georg H Endress and Ludwig Hauser. Ever since, the company has been pushing ahead with the development and use of innovative technologies, now helping to shape the industry's digital transformation. 8,900 patents and applications protect the Group's intellectual property.

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