

Endress+Hauser Prosonic clamp-on flowmeters continue to offer new possibilities

BURLINGTON, ON – While based on a mature measurement technology, clamp-on ultrasonic flowmeters like Endress+Hauser's Prosonic Flow W 400 and P 500 continue to evolve. The latter keep adding features and capabilities that expand the range of applications for which they are well-suited. These Endress+Hauser models were the first in the world to feature FlowDC technology, and they now offer additional sensor choices, including basic and high temperature variants as well as a petroleum package for oil and gas applications for the Flow P 500.

With FlowDC technology on board, Prosonic flowmeters can be located almost anywhere in a pipeline system. Other flowmeters can't be located close to pipe bends or constrictions because those cause turbulence in the medium that distort measurement data. With this FlowDC software-based function – DC stands for disturbance compensation – the measuring point of a Prosonic flowmeter can be as close as twice the pipe diameter to the point of interference, whereas other flow measurement devices require a straight section around seven times longer.

Beginning this year, the Flow P 500 and Flow W 400 series share basic technical data, including measurement performance and precision. Both cover nominal pipe diameters from 15 to 4000 DN ($\frac{1}{2}$ to 160"), which is sufficient even for penstocks in storage power plants. Depending on the nominal diameter, the permitted media temperature is from -40°C to +130°C (W 400) or -40°C to +550°C (P 500), and the measuring range is 0–15 m/s.

A Basic variant of both the Flow P 500 and Flow W 400 also has been added for operators who don't need all of the features of the standard models.

For most liquids, pressure, density and conductivity of the medium do not influence the flow rate with ultrasound measurement, but for others they must be taken into account. For crude oil and refined oil products in particular, or more generally for hydrocarbons, the actual volumetric flow is determined through pressure and temperature compensation. Endress+Hauser now offers a special petroleum application package for the Flow P 500 that calculates the necessary correction values based on API MPMS and ASTM calculation tables.

The ultrasonic sensors themselves are robust stainless-steel constructions, with versions for all common pipe materials, including plastic and GRP, with and without liners.

Endress+Hauser uses long-term stable coupling pads or heat-resistant metal foils, rather than the usual gels or paste which degrade over time, to assure the necessary perfect acoustic coupling is maintained year after year.

User support through software is another key feature of both Prosonic clamp-on devices. All diagnostic, configuration and device data can be accessed directly and with clear user guidance via the built-in web server. Even during installation, the signal quality can be checked via the control panel of the transmitter or through the web browser of a mobile device. This makes it easy to determine the optimum position of the sensors. That web server speeds up everything from configuration to device maintenance.

Prosonic Flow P 500 guarantees functional safety in accordance with IEC 61508 (SIL) and can be used in safety-related applications; it has the usual international approvals for potentially explosive atmospheres and can be used in hazardous areas.

As with the entire Proline product range, Prosonic Flow devices are equipped with HeartbeatTechnology. Heartbeat Technology provides self-diagnostics, self-monitoring and verification functions, and can regularly report the device status to the cloud and, for example, make it possible to plan upcoming maintenance work using trend analysis.

With the already high technical performance in the core areas of application and new off-label applications emerging, such as the detection of deposits in pipes or gases or particles in the volume flow, we can expect a lot more from the Prosonic Flow clamp-on device family with continuous further development.

About Endress+Hauser

Endress+Hauser is a global leader in measurement instrumentation, services and solutions for industrial process engineering. Our products – sensors, instruments, systems and services for level, flow, pressure and temperature measurement as well as analytics and data acquisition – set standards in quality and technology. The company further supports its customers with automation engineering, logistics and IT services and solutions. Founded in 1953 by Georg H Endress and Ludwig Hauser, the Endress+Hauser Group has been solely owned by the Endress family since 1975. Today, the Group is managed and coordinated by a holding company based in Reinach, Switzerland, employing over 16,532 personnel across the globe. In 2023, the Group generated net sales of 3.719 euros (C\$5.48 billion). Endress+Hauser's production centres in 12 countries meet customers' needs and requirements quickly and effectively, while its dedicated sales centres and strong partner network guarantee competent worldwide support.

Press Photo (.jpg file attached)

Endress+Hauser's Prosonic clamp-on flowmeter family keeps expanding with new variants, as well as a petroleum package for oil and gas applications

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