Endress+Hauser
People for Process Automation

Heartbeat Technology - The pulse of a plant

Information for predictive maintenance

Heartbeat Technology continuously diagnoses and verifies the measuring devices and processes of a plant. Without interrupting the process, Heartbeat Technology tests the instrumentation for measuring flow, level, temperature and analytics and documents the status in accordance with regulatory requirements. The information is collated on a dashboard and used to derive predictive maintenance and process optimization measures.

Imagine we could check the status of our plant in detail at any time using a heart rate monitor. We would be able to foresee if something requires maintenance, if a process is not running as it should or when exactly anti-foam agent is required, for example. As long as the heart rate monitor shows that everything is stable, there is nothing we need to do. However, plants are not living organisms, and we are not doctors. So is all this just a naïve idea? – Not quite! In actual fact, this type of continuous status monitoring with targeted measures when required is already possible with the technology available today.

The ultimate aim in every plant is to guarantee safe operation, optimize processes, reduce costs and increase availability. Heartbeat Technology avails of three functions to ensure that these goals are achieved: diagnostics, verification and monitoring. The bar graph illustrates the benefits of each concept.

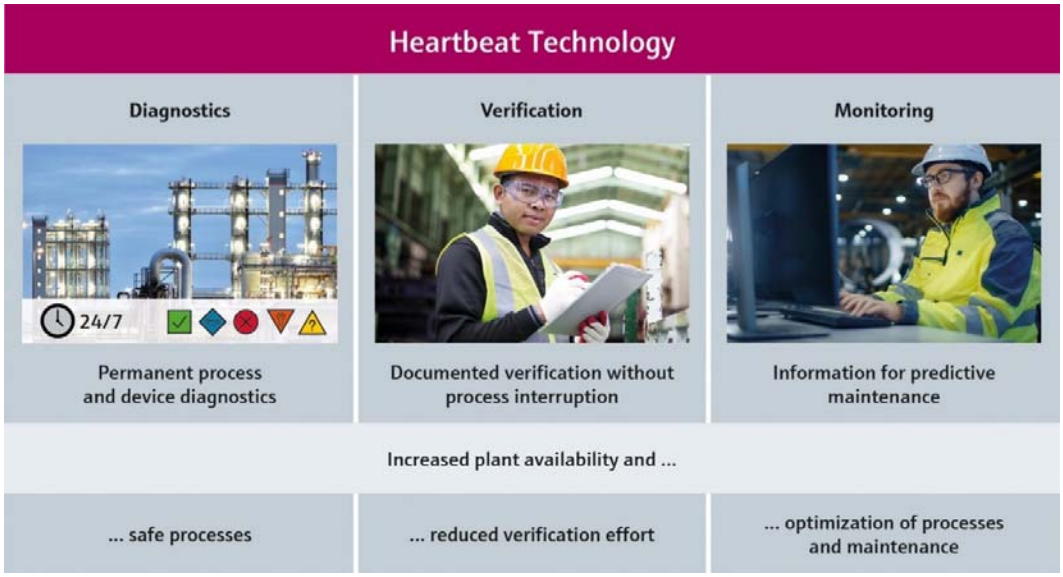
Diagnostics
To use the doctor analogy, Heartbeat Technology permanently monitors processes and measuring devices in the same way as a digital heart rate monitor on your arm. It provides standardized information with clear guidelines, thus enabling cost-effective maintenance. The system operator sees at a glance what needs to be done, and testing and inspection cycles are extended significantly as a result. The constant diagnosis of measuring devices also means that the system is operated to a high safety standard – while also reducing costs.

Verification
In the same way that you can check your heart rate while running, with Heartbeat Technology verification is possible without interrupting the process. It simply performs the checks during operation. Standards and regulations require that plant operators document the status of the process and instrumentation properly. Measuring devices featuring Heartbeat Technology automatically generate documentation in accordance with regulations and laws. A simple, pre-defined sequence guides the maintenance staff through the test. Once complete, the test results are clearly documented, thus reducing the cost of verifications for a SIL proof test or as proof of functional reliability.

Monitoring
All processes are read out accurately, and system operators can see at a glance when the next maintenance is due and which processes need to be optimized. So instead of having to go to the measuring devices regularly to check if something is wrong, maintenance staff attend to the devices only when necessary. If, for example, foam builds up from time to time in a tank where chemical processes take place, it is no longer necessary to keep adding anti-foam agent at regular intervals. The

level transmitters featuring Heartbeat Technology immediately detect the buildup of foam and trigger the release of anti-foam agent precisely when it is needed. This approach has enabled Infrapark Basel to achieve monthly savings of 80% on the cost of anti-foam agents.

Endress+Hauser regularly upgrades its range of measuring devices in the fields of temperature, analytics, flow and level to include Heartbeat Technology. By keeping a finger on the pulse of the plant, this technology plays a key role in the company's future strategy of ensuring safe and cost-effective plant operation for their customers.



Heartbeat Technology is based on diagnostics, verification and monitoring.

The Endress+Hauser Group

Endress+Hauser is a global leader in measurement instrumentation, services and solutions for industrial process engineering. The Group employs more than 13,000 personnel across the globe, generating net sales of over 2.2 billion euros in 2017.

Structure
With dedicated sales centers and a strong network of partners, Endress+Hauser guarantees competent worldwide support. Our production centers in 12 countries meet customers' needs and requirements quickly and effectively. The Group is managed and coordinated by a holding company in Reinach, Switzerland. As a successful family-owned business, Endress+Hauser is set for continued independence and self-reliance.

Products
Endress+Hauser provides sensors, instruments, systems and services for level, flow, pressure and temperature measurement as well as analytics and data acquisition. The company supports customers with automation engineering, logistics and IT services and solutions. Our products set standards in quality and technology.

Industries
We work closely with the chemical, petrochemical, food & beverage, oil & gas, water & wastewater, power & energy, life science, primaries & metal, renewable energies, pulp & paper and shipbuilding industries. Endress+Hauser supports its customers in optimizing their processes in terms of reliability, safety, economic efficiency and environmental impact.

History
Founded in 1953 by Georg H Endress and Ludwig Hauser, Endress+Hauser has been solely owned by the Endress family since 1975. The Group has developed from a specialist in level measurement to a provider of complete solutions for industrial measuring technology and automation, with constant expansion into new territories and markets.

For further information, please visit www.endress.com/media-center or www.endress.com

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