

Heartbeat Technology in the chemical industry

Liquiline CM44 transmitters for liquid analysis

Heartbeat Technology

The pulse of your measurement

Do you want to increase your plant's availability and decrease costs? With Heartbeat Technology, Endress+Hauser offers the widest choice of measuring devices incorporating a groundbreaking diagnostics and verification concept designed with this purpose in mind.

Through a clever combination of diagnostics, verification and monitoring, Heartbeat Technology enables safe and cost-efficient plant operation throughout the entire life cycle.



Liquiline CM44 transmitters are the top choice for all the measuring points you use to ensure the quality of your product.

Challenges in the chemical industry

The maintenance and repair of analytical measuring points are important tasks for operators of chemical plants. After all, reliable measurements of quality parameters such as pH or conductivity are the key to high-quality products.

In order to ensure that measured values are reliable and accurate and that the production process is therefore running efficiently, maintenance personnel are required to go to each individual measuring point in the field and inspect it on a regular basis. This applies in particular to pH measuring points where the highly acidic, alkaline or toxic media involved in chemical production processes can affect the accuracy of pH electrodes over time.

Depending on the production process, the maintenance intervals for analytical measuring points may be longer or shorter. Finding the optimum interval for each measuring point is a challenge: If the interval between

maintenance checks is too short, costs will be higher than necessary. If the interval is too long, measurements may fail resulting in decreased quality and product yield.

Requirements for an optimized solution

Maintenance managers in the chemical industry want a solution that allows them to establish the optimum maintenance intervals for their analytical measuring points. This would enable better planning of maintenance activities, allowing the company to save on maintenance costs and benefit from trouble-free production processes.

Our solution Heartbeat Technology offers a diagnostic function that continuously determines the status of the Liquiline transmitter and of all the sensors connected to it and displays it to you in a user-friendly way. Factors such as sensor wear and the length of time since the last maintenance inspection are taken into account. Using the Heartbeat Technology monitoring function, you can also access this status information centrally from the control room.

The status display for devices and sensors assists you with decision-making. For example, if the status of a pH sensor changes from “good” to “sufficient”, you know that the sensor is still functioning reliably but will soon be due for maintenance. This gives you time to schedule the maintenance of the measuring point, perhaps at a time when maintenance staff happen to be nearby.

In addition, Liquiline transmitters with Heartbeat Technology calculate different key performance indicators (KPIs). You can determine, for example, the level of availability of a measuring point, its Mean Time Between Failures (MTBF) and its Mean Time To Repair (MTTR). These KPIs enable you to compare different maintenance strategies and thus to develop the best possible strategy for your plant.

Benefits Thanks to Heartbeat Technology, your staff are always aware of the status of each measuring point. This minimizes the probability of a sudden failure or error while also eliminating unnecessary maintenance and service work on the site. This in turn saves operating costs while ensuring a high level of availability and reliability of your measuring points.

Heartbeat Technology allows you to achieve an optimum balance between the cost of maintenance and the availability of your plant.



✓ How you benefit from Heartbeat Technology in Liquiline CM44 transmitters

- Quick overview of status of complete measuring point, i.e. of the Liquiline transmitter and the connected sensors.
- KPIs help you to develop the best maintenance strategy for your plant: Has there been an increase in the MTBF? Has there been a reduction in the MTTR? And could the availability of the measuring point be optimized?
- Easy verification of the measuring point to the highest quality standard: A user-friendly verification report clearly indicates “Pass”/“Fail” results for all transmitter and sensor components.

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