

ESA technology allows for non-intrusive pump system monitoring

Monitoring of electrical motor-driven pumps with conventional methods is costly. A common approach is to measure the flow rate at the site of operations directly. But with no in-built flow measurement apparatuses, this approach requires the installation of a separate device, such as a portable ultrasonic flow meter. This is inefficient and does not allow for continuous surveillance, as it disrupts the pumping operations.

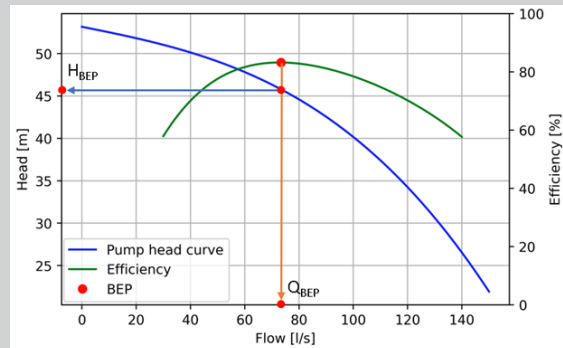
Flow measurements of pump output are time-consuming and enable evaluating only a limited number of pumps simultaneously due to the complicated setup. For this reason, it is not possible to get a comprehensive view of the entire pump fleet.

Initiating the measurements and data gathering quickly becomes economically unfeasible.

"Fortunately, combining ESA with state-of-the-art IoT technology provides an alternative way to monitor pumping operations. In fact, there exists a direct, albeit complex relationship between the motor input current and the flow generated by the pump. Thus, introducing clamp-on sensors to the pump motor power supply allows for non-intrusive and inexpensive measurements. The ESA model then analyzes the gathered data and computes the desired statistics from the pumping operations."

Antti Lehtikoinen, Principal Analyst at Viimatech

SmartView compiles data from all sensors into one intuitive cloud-based interface. The software creates a digital twin of each pump monitored, giving a comprehensive and detailed view of all pump operations.



The pump-specific data includes pump flow rates and energy consumption.

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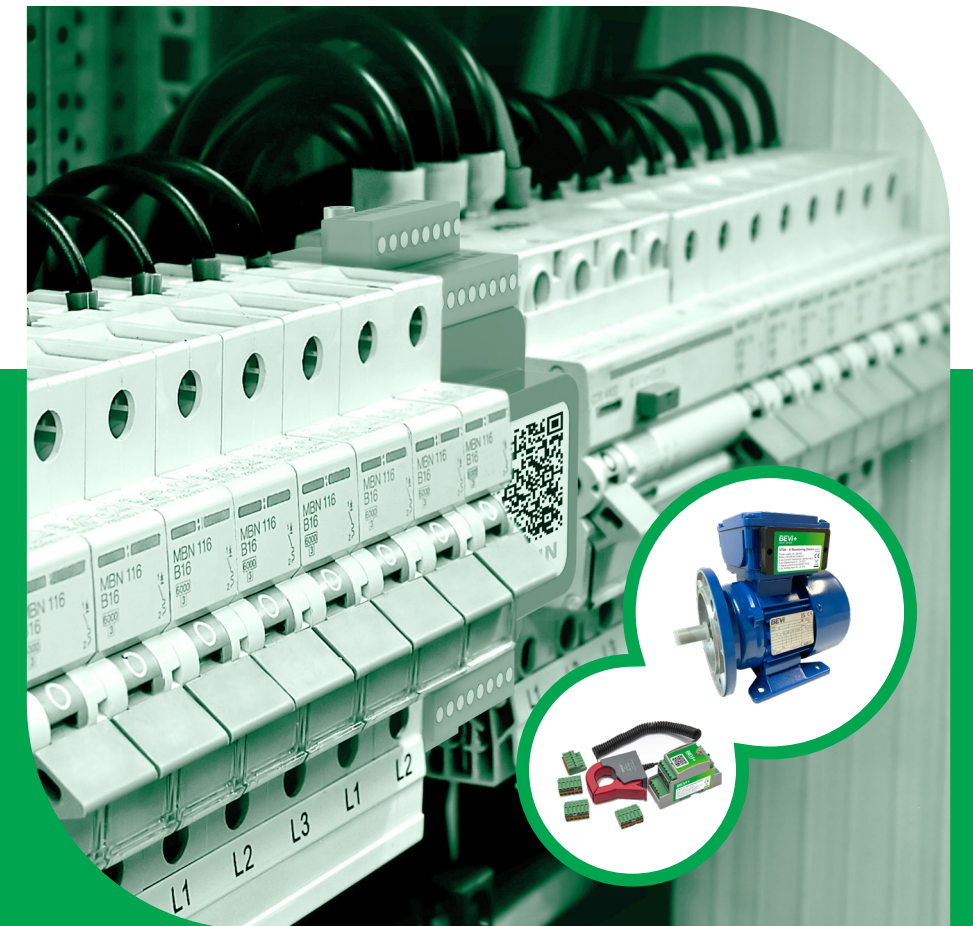
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Monitoring industrial pump operations is vital for increasing efficiency, decreasing downtime, and enabling preventive maintenance.

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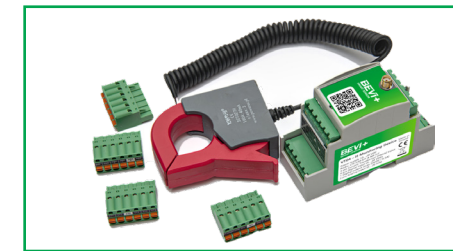
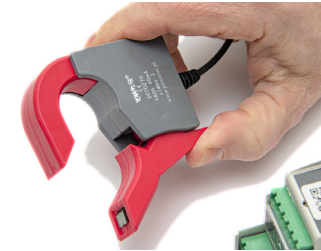
IoT and Electric Signature Analysis (ESA) provide an option to improve both these aspects radically. ESA uses pump motor current measurements to calculate various parameters, such as flow rates and motor usage. This allows for a new way to gain information on the state of pumping processes across operations.

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