

Abstract

Once a production plant has been successfully commissioned, the real operational challenge begins. Processes must be continuously optimized, new products developed, and product quality monitored. At the same time, plant operators must maintain stable production while coordinating production planning, staffing, shutdown schedules, and maintenance activities.

To support customers in managing these complex tasks, Wehrhahn has developed a centralized platform that collects and evaluates information from all plant PLCs on a single Master Control Server. The system accesses Siemens PLCs and extracts selected process and control data, including but not limited to densities, flow rates, pump speeds, equipment states, alarms, and internal control signals.

The collected data is stored in a high-performance database and made available through a web-based visualization platform. Operators, production managers, and process specialists can use configurable dashboards to monitor plant performance, analyze historical trends, compare production periods, and identify opportunities for improvement.

Beyond conventional visualization and reporting, the collected data can also be analyzed using artificial intelligence and machine-learning methods. Potential applications include anomaly detection, predictive maintenance, quality forecasting, process optimization, and the identification of relationships that may not be visible through traditional analysis.
