

## Engineered pump control systems: going beyond the standard solution

### Five good reasons for KSB SupremeServ:

- Individual system design from experienced project engineers
- Modular, control cabinet-based pump control system with PLC system
- Intelligent, pump-specific functions for reliable and efficient plant operation
- Characteristic curve control for protection against impermissible modes of operation
- Preconfigured data structures and interfaces for all common field bus systems



### Controls and monitors – professionally and automatically

The control system has a number of pump-specific functions that are interlinked in the modular control cabinet. These include the condition monitoring module for Industry 4.0 which detects abnormal operating parameters occurring with pumps and motors. This in combination with commercially available sensors for machine vibration monitoring allows measures to be taken in good time in order to prevent damage to the pump set. Perfectly tailored to suit your needs: a pump control system that can be easily and flexibly adjusted to meet your requirements while ensuring ultra-high operating and process reliability. An intelligent solution from KSB!

#### Our services

- Control of pump groups comprising a wide range of pumps using a flexible, expandable Siemens S7 SPS (PLC)
- Active power balancing for detecting and eliminating unbalanced hydraulic loads between pumps
- Load-dependent operation for optimum efficiency by switching the pump on and off as required
- Characteristic curve control for efficient operation and protection against impermissible operating modes, e.g. non-compliance with required NPSH values, clogging or dry running
- Adaptive dynamic speed ramps to prevent pressure surges

- Actuation of peripheral devices, e.g. motorised gate valves, control valves, filter monitoring devices is possible

#### Special solutions

- Software modules for tank cleaning systems (Amajet systems)
- Special switchgears for potentially explosive atmospheres
- Integration of a control function for vacuum systems

#### Contact

KSB Service GmbH  
Jens Rosar  
Tel. +49 6233 86-2145  
E-mail: [engineering.automation@ksb.com](mailto:engineering.automation@ksb.com)

# Engineered pump control systems **in practice**

## Save hard cash by using a sophisticated control system

KSB's engineered pump control system ensures your feed water pumps are operated economically and reliably. The project described involves a system using fixed-speed feed water pumps to supply several boilers in parallel via a manifold.

Although initial energy savings could have been achieved by simply retrofitting the pumps with frequency inverters and thus achieving the required pressure control, the reduction in energy consumption of up to 37 % was primarily achieved by analysing the primary and secondary control variables. Thanks to this process control variable analysis, it was not only possible to more specifically adjust the feed water pumps to the actual system requirements but also to reduce their energy consumption to a minimum. In conclusion, the engineered pump control system offered real added value here.

The pump control system also helps to increase the system's operating reliability, e.g. by automatically changing the parameter set in the event of a sensor error. Smoother switching operations ensure that wear on system components such as the automatic recirculation valve is minimised.

Integrated data recording helps to increase transparency. The added value of this feature is that the operating staff can retrospectively see in detail how the system has been operating, allowing them to identify irregularities and take appropriate action.

The maintenance module integrated in the control system informs the operating staff via the touch display when regular pump maintenance is due.



**KSB SE & Co. KGaA / KSB Service GmbH**  
Johann-Klein-Str. 9, 67227 Frankenthal (Germany)  
Tel. +49 6233 86-0, Fax +49 6233 86-3463  
E-mail: [ksbservice@ksb.com](mailto:ksbservice@ksb.com), [www.ksb.com](http://www.ksb.com)