

Coagulation-System

Customer requirements

In a painting system consisting of three lines, the overspray produced during painting is fed to a coagulation system via wet washing. This coagulation system, which is divided into lines, is to be renewed. Each of the three systems has an S5-115U controller. It is operated conventionally using control elements on the control cabinet. The system is to be completely renewed mechanically and electrically. The conversion must take place in several stages so that the paint shop can always produce in parts.



Solution design



For the coagulation system, 3 new control cabinet groups were set up, each of which is controlled by a TIA-1500-PLC. The PLC's of the three lines are networked with each other and exchange the data required together. All pumps are driven by frequency converters ATV 61 from Scheider Electric. On-site operation is carried out using a TP1500 Comfort panel. In addition, the system is visualized on a PC in the maintenance office using a WinCC Professional system. The PC is connected to the systems via a fiber optic connection.

Each of the three coagulating PLCs is connected to the respective S7-400 control of the associated painting line via Profibus. The coagulation systems are switched on via these connections as soon as the painting line goes into operation. The chemicals required for coagulation are fed into the process via Prominent dosing pumps.

Customer benefit

Operation	Significant simplification of the operation by Graphic user interfaces in panel and PC.
Energie efficiency	Reduction of energy costs through use of frequency converters.
Availability	Minimized downtime thanks to variable pump selection in the event of a malfunction.

Technical data:

- 3x400kW Feed-in power
- 21,6m Control cabinets
- 3x S7-1516 CPU with PN/PB/Eth
- 1x TP1500 Visualisation
- 1x WinCC-Professional Visualisation
- 12x 75kW frequency converter
- Feed pump output ca. 4000m³/h
- 21x Prominent dosing-pumps