Application Report

Federal agency for hydraulic engineering / Water and Shipping Authority

New construction of the sluice Uelzen II

The Elbe Side Canal connects the river Elbe with the Mittelland Canal. Due to the forcast of the increase of the shipping traffic is beside the existing sluice Uelzen I a construction of a new sluice in progress. These sluice features an effective length of 190 m, a nominal width of 12,50 m and a height of stroke of 23 m. 230.000 m^3 reinforced concrete were used. Therewith the sluice Uelzen II counted among to the biggest of her kind in the German domestic traffic.

To minimize the demand of channel water at operation, so called economising basins have been built. The filling of the sluice is raised by incremental from the economising basin over the supply channels and the under the chamber located base course channel into the lock chamber. A total of eight economising basins are connected in each case with two supply channels with the base course channel and this over multiplicity minor apertures with the lock chamber.

For monitoring of the hydraulically operated floodgates and branches of the economising basins, the reaction moments of the hydraulic cylinders are permanent monitored by force sensors. For this reason the operation should be stopped at fault (e. g. object prevents closing of a gate).

Carrier frequency modules of the type e.bloxx A6-2CF are used for the acquisition of the strain gauge signals. These offers:

- High reliability and signal stability through the used carrier frequency principle.
- Permanent force monitoring with 24 V control signal for emergency stop function.
- Profibus-DP interface for remote configuration and communication with PLC.
- Excellent price/performance ratio.

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