

CUSTOMER CASE



King Christian X's Bridge

Danmark

Plant Description

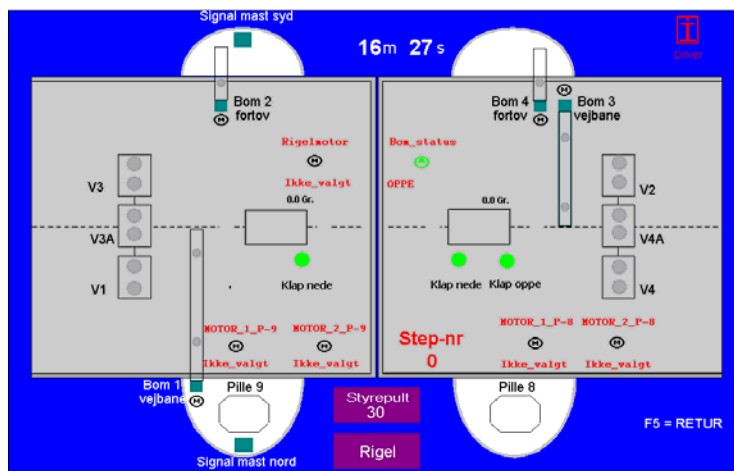
Kong Christian X Bridge in Sønderborg is a bridge with a history. The bridge is one of the oldest bridges in Denmark, although the bridge does not appear to be as old as it really is due to the bridge's simple construction. The bridge has been used as a combined automobile and rail bridge throughout its 70-year past. Today, approximately 10,000 cars cross the bridge daily.

Kong Christian X Bridge is a mechanical bridge, with its bascules being operated using electrical engines and many different shafts and gears.

The weight of each bascule is about 250 metric ton, with a counterweight of about 250 tons, resulting in 500 metric tons on each side of the bridge. It takes 4 minutes for the engines to open and close the bascules. The bridge was opened to the public in 1930 after a 5-year construction period and a cost of 2.85 million Danish kr.

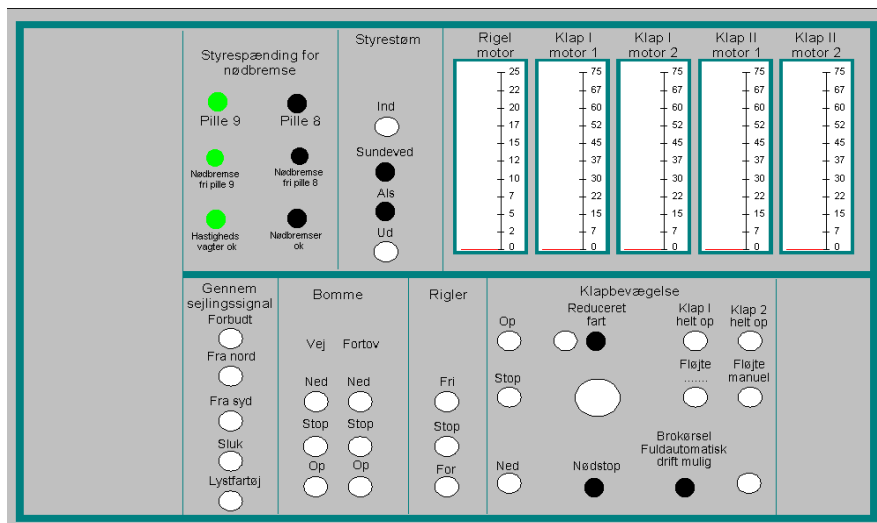


Before the modernization in 1996 and 1997, the motors used to operate the bridge flaps and sliding bolts were DC current injection engines. After the modernization, AC engines with frequency transformers were installed instead. At the same time, a new system for management, adjustment and surveillance of all the operations of the bridge was implemented.



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There are two engines for every bridge flap and they are used every other alternating day in order to test if they are fully functional and in order to evenly divide the workload on each engine.



If the engines both fail simultaneously, it is possible to manually operate the flaps and bolts by using a hand crank. At the last conducted test in 1997, it took two hours to open and close a bridge flap during which half of the city of Sønderborg's citizens had accepted an invitation to try to operate the crank.



IGSS

The SCADA system consists of a 400 object single-user system with one operator's seat.

Owner

Sønderborg Municipality

System Integrator

Høier & Vendelbo A/S