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ABB drives cut pumping costs for Welsh Water

Welsh Water is set to dramatically reduce the cost of its roadside pumping kiosks, following the adoption of ABB variable speed drives. Up to 20 kiosks a year are to be installed. Each kiosk contains two pumps, each driven by an ABB drive for water and wastewater, ACQ810, up to 22kW, in duty/standby mode, housed in IP54 enclosures.

The water utility needed to pump water to, and sewage away from, roads on new housing estates that are adopted by the local authority.

Welsh Water wanted a standard solution that would be simpler than the previous method. The existing solution for this application consisted of Form 4 motor control centres (MCCs). These kiosks have a large panel with their own PLC (programmable logic controller) and human-machine interface (HMI). They were costly and complex as they needed to be customised for each scheme and need to be sourced from three specialised manufacturers. With customised software required for each one, there was also an extended lead time needed for the deployment of each MCC.

The company specified its requirements to ABB, with which it has a framework agreement covering the supply of variable-speed drives. ABB worked on the project with its Authorised Value Providers, APDS.

The kiosks come complete with a generator changeover panel. The generator is external and brought to site in the event of an emergency. The changeover panel has a specific type of connector fitted, allowing the generator to be connected very quickly.

One of the major requirements specified by Welsh Water is to have its own pressure and flow parameters incorporated in the drive software. This allows its engineers to easily adjust the kiosks' pumping regime to meet the needs of housing developments as they expand.

Another example of these customised parameters is the emergency stop feature. In the event of one drive stopping in an emergency, the other drive would come online which could cause a problem for Welsh Water, particularly in the event of a pipe burst. An interlock was needed on this parameter, preventing the second drive from kicking in so that a leak could be traced and corrected.

The ABB drives offer customised control panel displays with the error messages familiar to the company's engineers. The drives provide data over their Modbus link to the company's telemetry system. As Welsh Water is using telemetry across the board, it was important that any drives installed could integrate into this system.

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Caption: An example of Welsh Water's roadside pumping kiosk equipped with ABB variable speed drives.

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