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ABB bring advanced ventilation control to Clyde Tunnel

ABB motors and drives are an integral part of an advanced new SCADA controlled ventilation system for the Clyde Tunnel.

The new ventilation system is controlled by a SCADA controller communicating over a fibre optic network with the drives controlling the fans.

Bob McKinnon, Tunnel Master for the Clyde Tunnel, says: “The new drives give us fine control of the ventilation fans. In the event of a fire, we need to switch on all 18 fans at once, which the previous system could not do. Using the SCADA system, we can monitor the carbon dioxide levels in the tunnel and tune the speed of the drives to give the right tunnel air conditions at the minimum speed, saving electricity.

“Previously, speed control of the fans was achieved using seven-speed motors controlled by resistance banks. We had numerous problems with stepping relays burning out and the old starters could only switch on one motor at a time, so it was clear we needed a complete new system.”

McKinnon asked Paul Ducker Systems (PDS) to design a new ventilation system, using the existing fans but incorporating a more advanced control network. PDS chose ABB motors and drives, 12 to drive the supply fans and six for the exhaust fans. Supplied and installed by ABB Drives Alliance and Motor Service partner EDC (Scotland), the ABB drives were chosen because they were one of the few variable speed drives that could be operated using a SCADA based control system. The ventilation system is a semi transverse system, in which half the exhaust air is extracted by the exhaust fans and half leaves through the tunnel portal.

Built in 1957, the 760 m long tunnel links Govan south of the River Clyde with Whiteinch in the north. A twin tube design, it was built to carry 9,000 vehicles a day but currently handles 60,000.

ABB (ABBN: SIX Swiss Ex) is a pioneering technology leader in power grids, electrification products, industrial automation and robotics and motion, serving customers in utilities, industry and transport & infrastructure globally. Continuing a history of innovation spanning more than 130 years, ABB today is writing the future of industrial digitalization with two clear value propositions: bringing electricity from any power plant to any plug and automating industries from natural resources to finished products. As title partner in ABB Formula E, the fully electric international FIA motorsport class, ABB is pushing the boundaries of e-mobility to contribute to a sustainable future. ABB operates in more than 100 countries with about 147,000 employees. www.abb.com



Caption: Carbon dioxide levels in the Clyde Tunnel are controlled with a new SCADA system using ABB motors and drives.

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