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ABB drives save £27,000 on yarn spinning costs

ABB low voltage AC drives are set to save a woollen yarn spinner nearly £27,000 a year in energy costs.

The project was completed by Tatham Ltd, a specialist in the control of textile machinery. Tatham's customer, Milliken, produces cloth for use in tennis balls and billiard tables. The carding machines were driven by existing DC drives controlled by TASC units. The original set up used a 15 kW motor, a 25 kW motor and two 7.5 kW "Tandem Motors" to drive various sections of the machine. These motors were also driving the machine sections directly, shaft to shaft, meaning that the motors were continually running at full load current and sometimes overheating.

The new TS drive systems each comprise 4 AC drives using ABB Direct Torque Control (DTC) and new high efficiency AC geared motors. DTC allows complete synchronisation of the machine sections, giving highly accurate control and improved product quality together with the reduced power usage. The solution achieved yearly energy savings of 540,000 kWh which has reduced the energy bill by £27,000, while cutting CO₂ emissions by 292,000 kg/year. Payback for the system was just over 10 months.

In the new control arrangement, 11 kW geared motors and associated gearboxes were fitted on the scribbler, carder and eccentrics sections, along with an additional 4 kW motor and gearbox on the doffer. The gearboxes ensure that the correct power is delivered to the rollers while allowing the use of a smaller motor. The AC drives are also run at 40 Hz, allowing further energy savings.

The low voltage AC drives display data that inform users of the "On Time", when the motors are switched on, "Run Time", when the motors are driving the rollers, and "Kilowatt Hours Used", making it easy to compare the operation with the previous situation.

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: Operator interface for TS drive or TS weigh system.

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