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ABB control system cuts costs and boosts production for cable maker

An ABB control system is increasing productivity, lowering waste and reducing energy costs for UK cable manufacturer

British Cables Company (BCC) in Manchester, UK, replaced the control system on two insulated cable-making lines resulting in a 29 percent increase in the number of reels produced during an eight-hour shift. The new system controls the wire tension and maintains the correct drawing diameter as the wire is pulled through an extruder, while running at an increased speed of 1,800 metres a minute.

The company was unable to source spare parts for the original control system. This resulted in frequent breakdowns costing over £60,000 per annum in lost production. Restarting the system added a further £38,000 per annum in engineering costs.

The original control system was slow to respond, setting up the machine to produce a new colour of cable often resulted in several false starts, resulting in wire snapping and up to 10,000 metres of scrapped cable.

The new ABB Compact HMI SCADA system, supplied, installed and commissioned by ABB's Engineering Centre in Coalville, UK, controls two ABB AC500 programmable logic controllers (PLCs) on each line. The PLCs are linked by ProfiNET to five ABB variable speed drives (VSDs), rated between 4 kW and 60 kW, each of which control the speed of ABB AC motors. In addition, a smaller ABB VSD is used to control the positioning of the water trough that cools the extruded wire. Upgrading the motors and drives has reduced energy costs by £16,000 a year across the two lines.

The control system now triggers cable colour changes on the fly by reducing the machine speed to 200 metres a minute during the changeover. This has resulted in an 80 percent reduction in waste. Additionally, safety of the production line is improved as guards are electrically controlled and rotating equipment is electrically interlocked. This prevents the safety guards from being opened while the line is running.

"We have exceeded our goal of running the lines at 1,600 metres a minute," says James Glenn, business improvement team leader for BCC. "The engineering detail we can get from the system shows exactly what stage each machine is in – and the speed of everything on the lines. Installing the two systems has achieved over £60,000 in extra production due to the higher line speed."

ABB (ABBN: SIX Swiss Ex) is a pioneering technology leader with a comprehensive offering for digital industries. With a history of innovation spanning more than 130 years, ABB is today a leader in digital industries with four customer-focused, globally leading businesses: Electrification, Industrial Automation, Motion, and Robotics & Discrete Automation, supported by its common ABB Ability™ digital platform. ABB's market-leading Power Grids business will be divested to Hitachi in 2020. ABB operates in more than 100 countries with about 147,000 employees.



Caption: An ABB control system is increasing productivity, lowering waste and reducing energy costs for British Cables Company

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