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Film maker slashes costs with ABB drives

ABB drives have helped a manufacturer of plastic film cut its energy bill by 66 percent for its slitter-winder machine.

BPI Films of Sevenoaks in Kent produces 13,000 tons of plastic film a year for customers in the food and medical packaging industries who laminate it to other substrates.

The company has a slitter-rewinder, which it uses to rewind film produced by other machines. The machine was operated using old hydraulic gears, with ABB motors but without encoders and drives. The hydraulic gears proved inefficient and unreliable and were subject to breakdown and therefore needed much maintenance.

Ron Jeffrey, Engineering Manager for the plant, says: "The hydraulic system suffered from oil leaks. We constantly needed to replace the oil and costs were rising."

BPI decided to replace the hydraulics with an ABB variable speed drive. Says Prudence: "We have standardised on ABB motors and drives throughout the plant and so looked for an ABB drive to use on the slitter-rewinder."

The application uses two 7.5kW ACS 600 drives - one as the main drive to regulate the speed of the machine by driving a rubber covered roller, while the other drives the winder core shaft.

The main drive reduced the demand of the principal motor from 22A per phase to 7A per phase, a saving of 66 percent. Even with the winder core shaft motor being driven, used to give extra torque when winding sticky materials, the overall energy saving is 33 percent.

Using ABB winder software, the main drive takes signals from the winding machine, processes them and outputs a speed or torque signal. This keeps the motor running correctly and maintains the correct tension in the material, taking account of the changing diameter of the reel.

The drives were commissioned by Martin Davenport, Account Manager, of ABB. "The ACS 600 drives used on this application use ABB's Direct Torque Control (DTC), overcoming the limitations AC drives have in controlling torque", says Davenport.

"Because DTC can work out the speed of the motor accurately, no encoders are needed, saving further expense. Usually a drive needs an encoder to improve its precision, particularly at low speed, ABB's DTC drives can achieve maximum torque at zero speed without an encoder."

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Caption: BPI Films is saving 66% of the energy on a slitter-rewinder machine for plastic film, following the installation of variable speed drives from ABB.

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For more information please contact:
Layla Hewitt
Marketing Communications
Phone: 01925 741517
Email: layla.hewitt@gb.abb.com

ABB Ltd.
Daresbury Park
Daresbury
Warrington WA4 4BT

Emma Jenkinson
Armitage Communications
Phone 020 8667 2218
Email: emma.jenkinson@armitage-comms.co.uk