Schwarzbeck uses frequency inverters for the drive motors on feeds and knife driving shafts, which keep speeds constant even at variable loads.

New possibility of energy regeneration

In the past, the kinetic energy depleted with every brake application was converted to heat by means of brake resistors in the switching cabinets. This heat had to be dissipated from the switching cabinets afterward by means of air-conditioning systems, which meant additional technical effort and energy consumption. The mechanical engineering company has now found a much more energy-efficient solution: it is equipping all its machines with regen-
Customers profit from the use of inverters

“The system changeover was inspired by the Siemens office in Hamburg. They have supported us from beginning to end,” says Schwarzbeck. A drive expert also assisted with the start-up. “This technical support is extremely important for a medium-sized company like ours,” emphasizes Schwarzbeck. “With a partner like Siemens we are also able to obtain spare parts and support all over the world, 24/7, if necessary. Thanks to Siemens, our machines can therefore also be serviced reliably by a relatively small team.” According to Schwarzbeck, machines equipped with Sinamics G120 have been running for more than a year without any failures at many leading wood-processing companies. “The changeover was therefore beneficial both for us and for our customers,” concludes Schwarzbeck.

The regenerative inverters of the Sinamics G120 series have a modular design and are very cost-efficient due to the control components and power elements. Schwarzbeck is using both conventionally wired versions and those that communicate via Profinet. For the latter, inverters are connected to the Simatic S7-300 control, which reduces the amount of cabling and ensures that installation remains straightforward and simple. The Profinet technology also facilitates communication with upstream and downstream applications such as conveyors. In addition, using this technology opens up the possibility of what is referred to as “routing into the drives”; this enables consistent and easy remote diagnosis and maintenance, which reduces time- and cost-intensive servicing interventions. The operators also benefit from shorter downtimes and can therefore enjoy the highest availability and plant output.

“We use additional Siemens devices for local operating and visualizing,” explains Joachim Schwarzbeck, who is responsible for marketing at the company. Among these are the HMI devices, which are inherently optimized for interaction with Siemens control systems, eliminating the need for time-consuming coordination. For simpler machines, the combination of a Simatic S7-300 and an operator panel with a touch display is standard. The larger machines with additional linear units are controlled via the Simatic MP377 Multi Panel embedded system with the Simatic WinAC MP software PLC, which has proven its effectiveness in practice.

THE CHANGEOVER TO REGEN ERATIVE DRIVES FROM SIEMENS WAS BENEFICIAL BOTH FOR US AND FOR OUR CUSTOMERS.”

Joachim Schwarzbeck, Marketing Manager, Georg Schwarzbeck GmbH & Co. KG

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