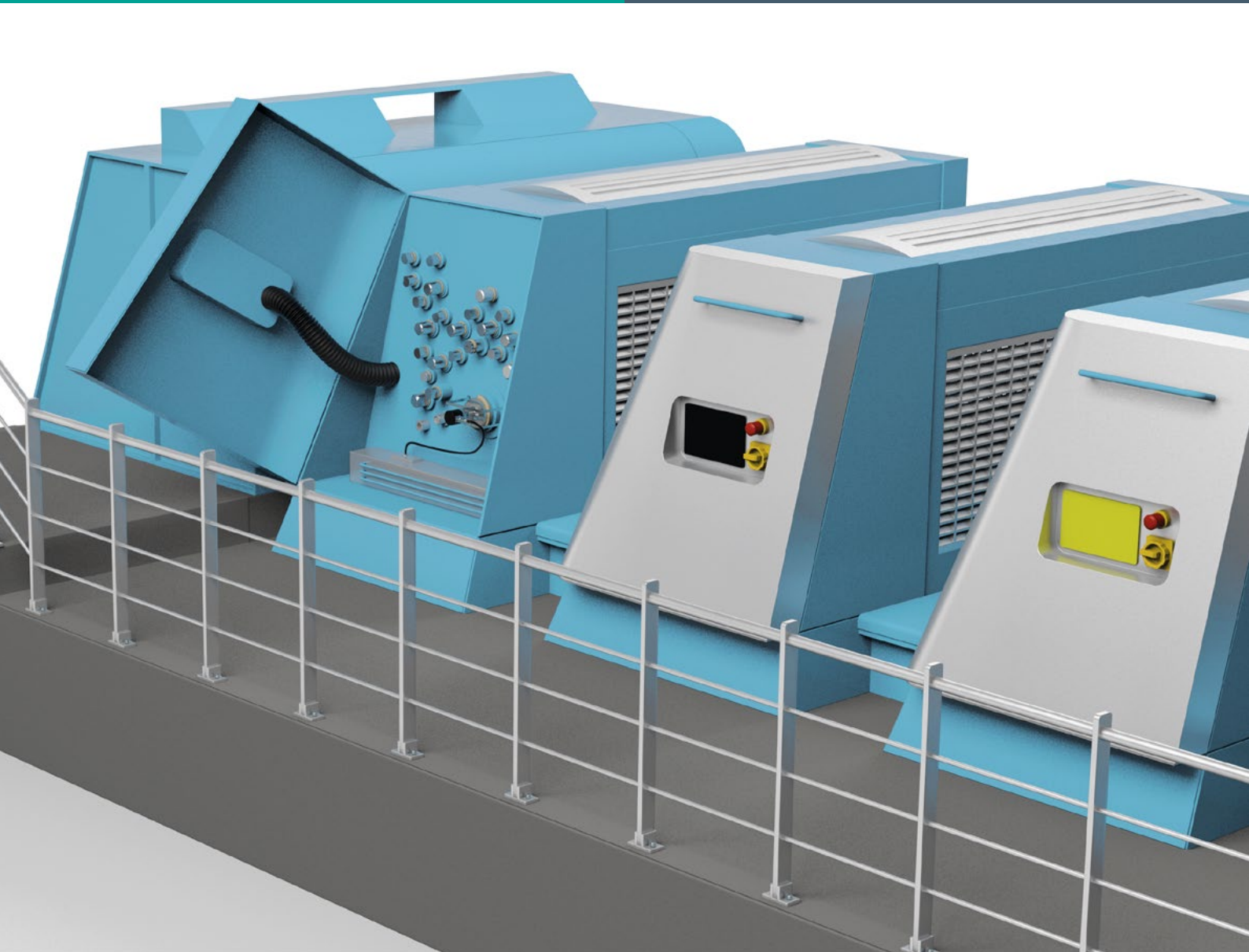


Synchronous Roller Movement in Printing Presses

Wear-Free Magnetic Rotary Encoders for Reliable Operation

At a Glance

- High degree of accuracy and high resolution for synchronous roller movement
- Extremely robust, not susceptible to wear, and maintenance-free
- No downtime caused by sensors
- Exact position data provided even in the event of a power failure, enabling an immediate restart
- Wide range of interfaces (EtherCAT, PROFIBUS, PROFINET, SSI)



The Application

Newsprint flies through the offset press at a speed of around 50 kilometers an hour. At this speed, the movement of the numerous rollers must be coordinated with absolute precision to ensure that the webs do not tear or crinkle, and that the information is printed in the right place. Any deviations put the process in jeopardy.

The Goal

Printing presses are among the most complex and expensive machines in existence. In order to recoup the purchase costs of these machines, the presses should be run with as few breaks as possible. Maintenance times should be kept as short as possible. In the presses, the rotation of the rollers is monitored using rotary encoders. Despite the strong vibrations and ever-present ink dust, these rotary encoders must remain both precise and reliable in their operation.

The Solution

The ENA58IL series from Pepperl+Fuchs is the first line of magnetic rotary encoders that can meet the requirements of high-performance printing presses. The encoders are more reliable due to their resistance to shock and vibrations, and their ability to withstand harsh environments of dirt and dust. Using a Wiegand sensor allows for a more compact design and eliminates the need for gears.

The Benefits

Thanks to their short cycle time of less than 80 microseconds, they are ideal for high-speed operation in printing presses. With an accuracy of 0.1 degrees and a resolution of 16 bit, the magnetic rotary encoders of the ENA58IL series provide exact position data to ensure that the rollers run synchronously. The devices generate an induction voltage with every axis rotation, thereby supplying power to the electronics. This eliminates the need for a built-in battery that needs to be changed at regular intervals. Using this intrinsic energy, the rotary encoder is able to provide exact position data even in the event of a power failure, meaning that the press can continue to run immediately after a restart without the need for recalibration. Interfaces for SSI, EtherCAT, PROFIBUS and PROFINET ensure seamless communication.

Technical Features

- Design: Ø 58 mm
- Shaft type: solid and recessed hollow shaft
- Flange type: servo flange; hollow shaft flange with torque rest
- Max. rotational speed: 12,000 rpm
- Degree of protection: IP65 and IP67
- Max. shaft load: axial 40 N, radial 110 N
- Electrical interfaces: SSI, PROFIBUS, PROFINET, EtherCAT
- Max. bit count: singleturn 65,536 (16 bit), multiturn 65,536 (16 bit)

