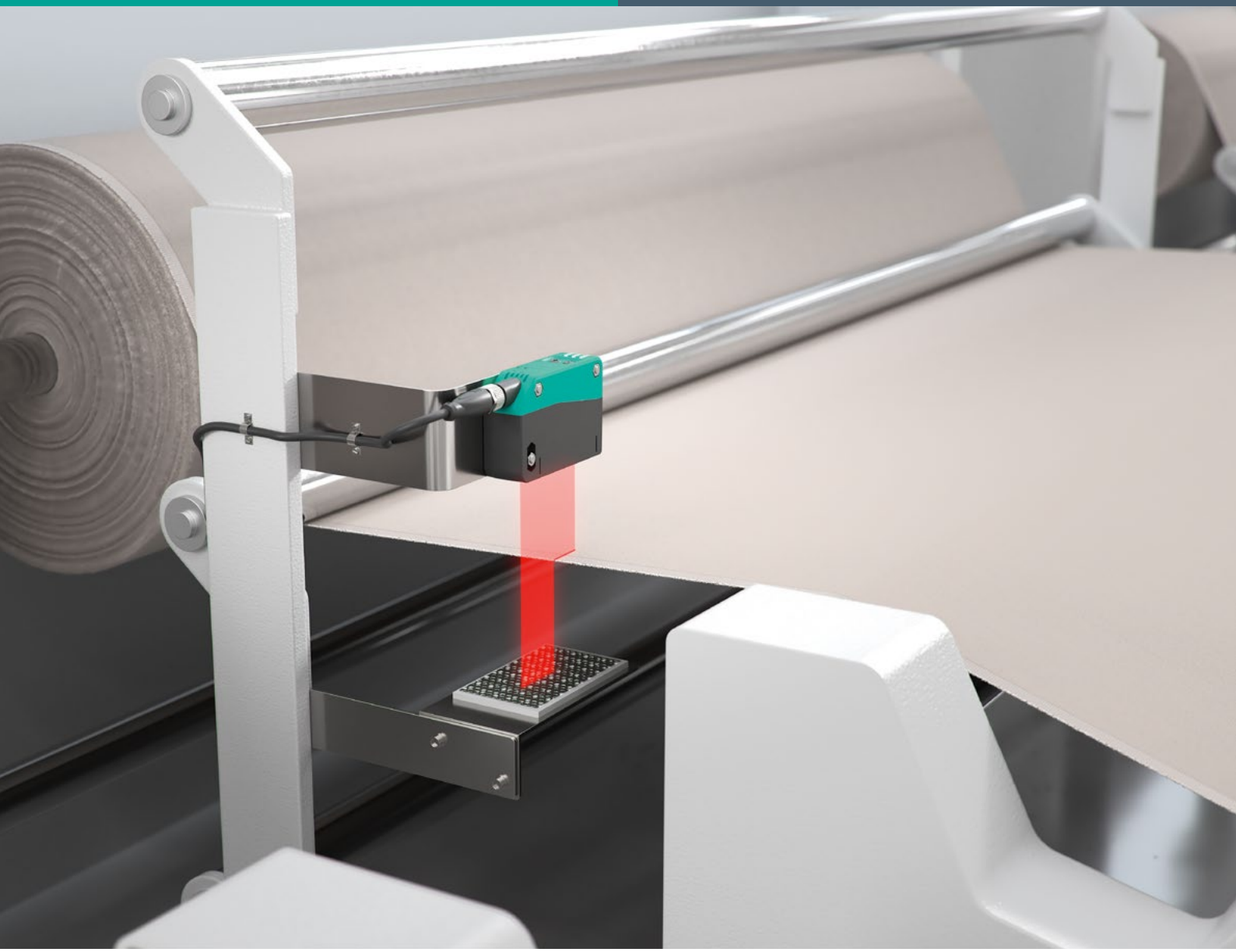
Precise Web Edge Control for Stable Textile Processes

R305 Retroreflective Area Sensor with Integrated Height Measurement Replaces Complex Systems

At a Glance

- Precise real-time detection of the web edge position
- Stable process control at high web speeds
- Cost-efficient alternative to more complex systems
- Insensitive to airborne fibers and contamination
- Seamless integration via IO-Link



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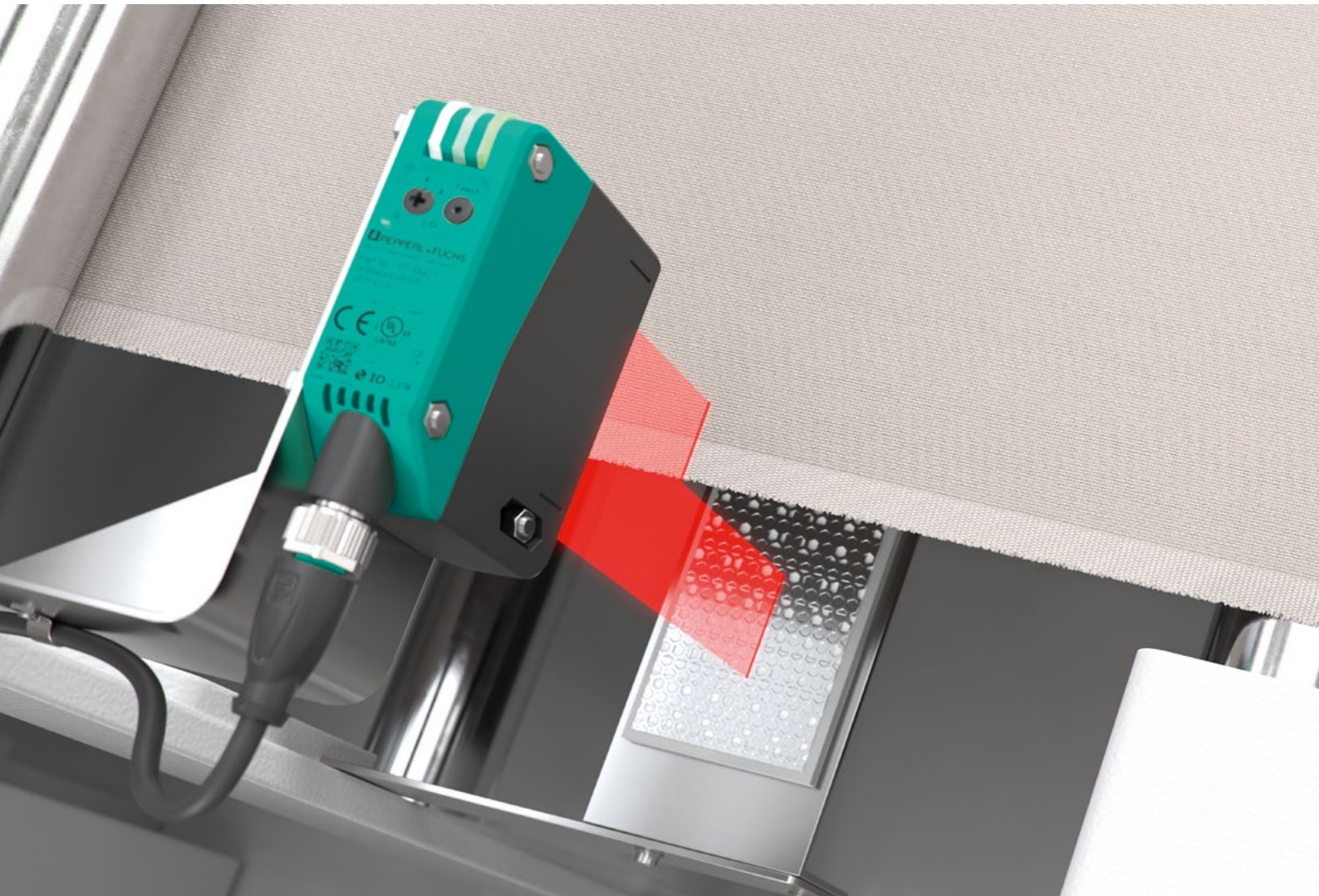
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The Application

In textile machinery, material is conveyed as a continuous web over several guide pulleys and through various processing stations. Even minor lateral deviations of the web edge can lead to inaccuracies in downstream process steps. To ensure stable and reliable process control, the web edge position must therefore be monitored in real time.

The Goal

The aim is to detect positional deviations of the textile web at an early stage and automatically initiate corrective action before misalignment, rejects, or machine downtime occur. At the same time, the solution should be economical and not require complex systems. Reliable operation, even in the presence of airborne fibers and contamination, is essential for long-term use in production environments.



The Solution

The R305 retroreflective area sensor detects the position of the web edge within its 60 mm-wide light band without physical contact and in real time. The exact edge position is determined using integrated object height measurement and transmitted continuously to the controller via IO-Link. If the deviation approaches a defined limit value, a correction of the path can be triggered automatically. Automatic signal compensation offsets contamination caused by airborne fibers, ensuring reliable measurement results over the long term without requiring time-consuming maintenance or readjustment.

The Benefits

Continuous monitoring of the web edge position significantly increases process stability. Deviations are detected at an early stage and corrected before they result in quality defects or rejects. At the same time, the solution significantly reduces integration costs, as no complex image processing systems or specialized lighting are required.

Compared to more complex systems, the R305 provides a cost-effective alternative that requires less engineering effort while offering a rugged industrial design and straightforward parameterization. The combination of a wide light band, integrated height measurement, and IO-Link data transmission enables precise and efficient process monitoring.

Technical Features

- 60 mm-wide light band with five individually switchable beams
- Integrated object height measurement with 2 mm resolution
- Measuring range: 0–2 m (high resolution mode)/ 0–4 m (standard mode)
- IO-Link interface for transmitting measurement and status data
- Automatic signal compensation in the event of contamination
- Auto-teach function for fast and easy commissioning



For more information, visit: **pepperl-fuchs.com/px-r305**