

Continuous Material Flow in Textile Machines

The PMI360D-F130
Positioning System Provides Exact
Angle Measurement

At a Glance

- The PMI360D-F130 positioning system ensures a continuous material flow in textile machines
- Noncontact, wear-free angle measuring system with a measuring range from 0° to 360°
- Efficient angle position feedback—measuring and switching in a single device
- Fully encapsulated sensors up to IP67 degree of protection for the toughest operational conditions



The Application

The fabric used for producing a wide range of end products in the textile industry is initially made from different yarns that are processed on knitting machines. The fabric is then pretreated in washing and bleaching plants. After the fabric has been dyed in a cold-dyeing plant, a mechanical procedure is performed to prevent it from shrinking. The final step is the fully automated cutting process. The continuous material flow is regulated throughout the entire fabric production process by dancer arm control or oscillator compensation.

The Goal

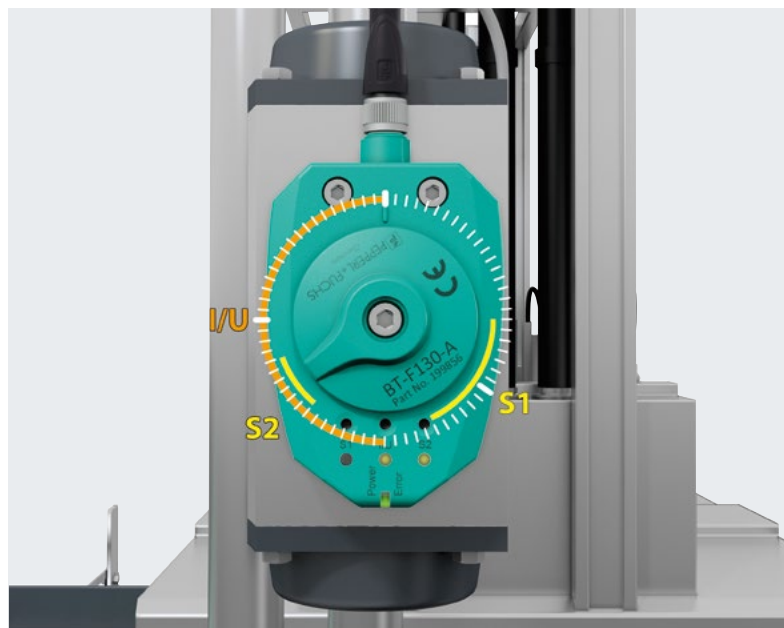
To ensure that production processes run smoothly, the material must not tear—even under high tension. The aim is to maintain a consistent material tension. This means tensions that are too low must also be detected to avoid overlaps or creases forming in the material. A sensor should be used to measure angles continuously and precisely, ensuring reliable manufacturing processes and high plant availability.

The Solution

The PMI360D-F130 analog measuring system is an optimal solution for this task due to its scalable measuring range and freely parameterizable switch points or windows. Its noncontact scanning system in an IP67 housing can withstand even the toughest operational conditions. The “pointer movement” of the oscillator compensation is transformed into a power signal (working range 4 ... 20 mA), which is used for feed drive control. A process display indicates the PMI360D-F130 signals to the plant operator.

The Benefits

The PMI360D-F130 analog measuring system enables high plant availability and therefore ensures smooth production processes. The positioning system operates reliably, even in adverse operational conditions. The device can be operated with the standard activator or custom-made activator. The analog output can be scaled specifically to the required angle range. In addition to the feedback on the analog angle position, the sensor provides two programmable switching windows for the monitoring of the end position.



Technical Features

- Measuring range: 0° ... 360°
- Scalable analog output
- Output type: 2 PNP switching outputs, normally open, reverse polarity protected, short-circuit proof
- Degree of protection: IP67
- Adjustable switch points
- Not sensitive to vibrations or shocks from the shaft