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Novel edge control with ultrasonic fork sensor

Edges of running webs and belts get laterally misaligned after a short time without permanent external control. Typical applications are found for example in the manufacture and processing of foils, paper, tin or textiles, but also for drive belts. Previously, mechanical or optical sensors have been used to determine the lateral position of the edge in order to continuously adjust mechanically. These are often too slow or too sensitive to dirt and dust. Moreover, optical sensors cannot reliably detect edges of transparent or partially transparent material. Especially modern packaging and labeling foils have these properties: they are transparent and partially printed.

The new ultrasonic fork sensors series UPF-A of SNT Sensortechnik AG have been developed exactly for these applications. They consist of a transmitter and receiver who exchange ultrasonic signals. The ultrasonic transducers are developed and manufactured in-house. Depending on the coverage of the edge, more or less signal is received. Since sound propagates also "around the corner" and is reflected repeatedly from both sides of the web edge as well, the integrated signal processing is much more complex than for conventional sensors. Thanks to its innovative hardware and software the sensor has a linear 0...10V signal output with a sensitivity of approximately 0.8V/mm. This allows to detect very small edge deviations at high speed. The sensor can be powered with 8...30VDC. There are two sizes available, one with 8mm and the other with 13mm measuring range.

SNT Sensortechnik AG is a specialist in ultrasonic sensors for more than 20 years.



UPF-A Ultrasonic fork sensors with analogue output