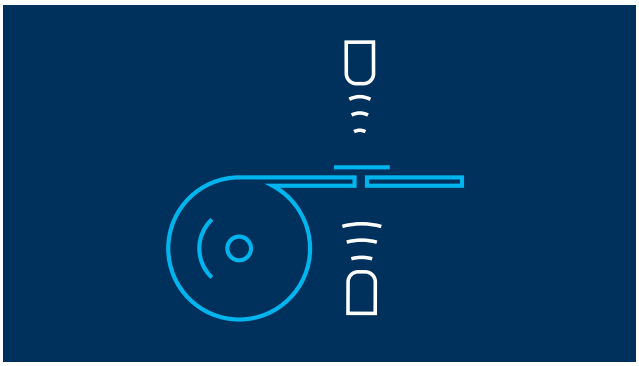
Splice detection



application areas

Printing and Paper

Packaging

Dual-head sensors

Web materials—such as paper, plastic films, metal strips, or textiles—are often joined with adhesive tape, either butted or overlapping. A ultrasonic splice sensor detects these splices or adhesive bonds in the web material, which is typically unwound from a coil, non-contact and reliably.

How Splice Detection Works?

An ultrasonic transmitter emits a rapid sequence of pulses from below onto the web material. These sound impulses cause the material to vibrate, resulting in a significantly attenuated sound wave being emitted on the opposite side. The receiver captures this sonic wave and analyses it. The web material signal level is different to that of the splice or adhesive bond. And this difference in signal is analysed by the splice sensor.

However, the difference in signal levels between the web material and a splice can be very small. To ensure reliable detection, the ultrasonic sensor must first learn the signal level of the web material.

Typical Applications of Splice Sensors

- Detecting adhesive bonds in paper webs
- Identifying splices in films or plastic webs
- Monitoring splices in metal strips (coil monitoring)
- Detecting weld seams in pouch packaging

SENSORS FOR THIS APPLICATION AREA



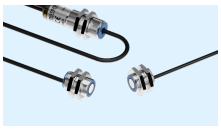
esp-4/3CDD/M18 E+S

working range: sheeting with weights of < 20 g/m^2 up to >> 600 g/m^2, metal-laminated sheets and films up to 0.6 mm thick, self-adhesive films,...



esp-4/3BEE/M18 E+S

working range: sheeting with weights of < 20 g/m^2 up to >> 600 g/m^2, metal-laminated sheets
housing: cylindrical M18...



esp-4/M12/3CDD/M18 E+S

working range: sheeting with weights of < 20 g/m^2 up to >> 600 g/m^2, metal-laminated sheets and films up to 0.6 mm thick, self-adhesive films,...



esf+1/CFF/Pro

housing: fork-like
outputs: 2 x Push-Pull
measuring cycle time: ≥ 150 µs
operating range: all standard labels



esf+1/CFF/Exp

housing: fork-like
outputs: 2 x Push-Pull
measuring cycle time: ≥ 300 µs
operating range: difficult-to-detect...