



Insenitive in any position

Inductive strip position measurement SMI

Operating method:

The measuring principle of the SMI sensor family (Strip Measurement Inductive) is based on electromagnetic induction.

In this setup, two centre sensors are arranged on each strip edge perpendicular to the strip pass line level and they are configured in such a way that the strip passes between the sensors as centrally as possible.

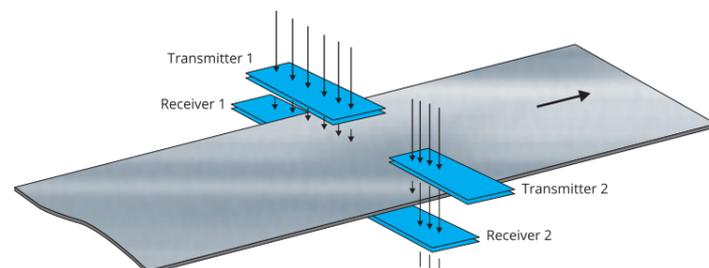
The part of the sensor located above the strip functions as a transmitter and the opposite sensor functions as a receiver. The SMI2.11.x electronic unit supplies the transmitters with a regulated, sinusoidal alternating current voltage. At each transmitter coil, a distinctive electromagnetic alternating field is formed and directed towards the opposite receiver.

The receivers detect a different intensity, depending on the position of the strip.

The alternating voltages induced in this manner provide analogue output signals for the strip edge position by evaluating the frequency-dependent amplitude level. The inductive measuring system contains complex self-monitoring characteristics. The individual signals are combined into the collective messages „Measuring equipment OK“ and „Strip detected“.

Technical features:

- » maintenance-free and robust
- » modular sensor design
- » optimised symmetry properties
- » improved centre measuring accuracy
- » various possibilities to achieve your individual requirements
- » unsusceptible to disruptive external influences
- » reliable detection of even non-magnetic materials such as aluminium, copper, brass and austenitic chrome nickel steels (e.g. 1.4301)



Options:

- » all SMI sensors are available with separate evaluation electronics for mounting beside the process line
- » delivery of customer-specific design on request
- » optional design, engineering or delivery of mechanical protective frames for all kinds of inductive sensors

Available variants:

Compact measuring frame with integrated evaluation electronics. Optionally available with a 30 m connecting cable for remote mounting of the evaluation electronics.

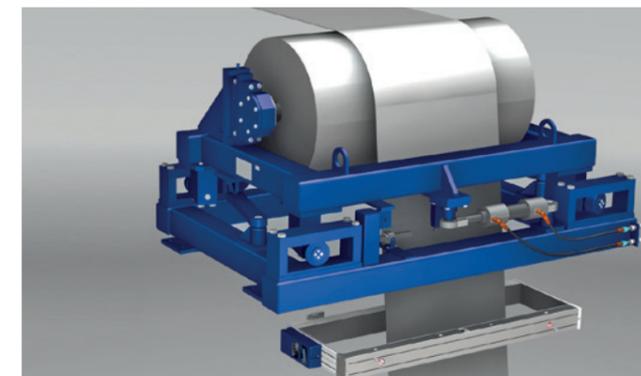
Customer benefits:

- » wide area of application ranging from 0.05 mm to 16 mm strip thickness (others available on request)
- » maintenance-free
- » SMI sensors are insensitive to
 - › changing insulation resistance caused by dust deposits on the measurement setup
 - › disturbance of the static field, e.g. in the case of inspection cycles by system personnel
 - › water and metal vapours produced during strip treatment processes
 - › dust containing scale and metal
 - › ionising furnace atmospheres

SMI-SE (Standard edition)*:

Standard strip centre measuring system

Sensor type	Accuracy	Max. change in width
SMI-SE / 150	+/- 2 mm	300 mm
SMI-SE / 300	+/- 2 mm	600 mm
SMI-SE / 500	+/- 3 mm	1000 mm
SMI-SE / 750	+/- 3 mm	1500 mm
SMI-SE / 900	+/- 5 mm	1800 mm



SMI-LE (Looper-Car edition)*:

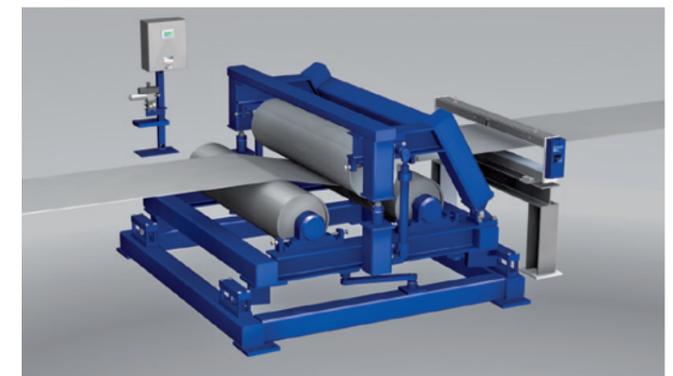
Strip centre measuring system for use at a normal* ambient temperature, with frame reinforcements for enhanced mechanical requirements, such as on a looper car.

*Ambient temperature up to 50 °C

SMI-HE (High-precision edition)*

High-precision strip centre measuring system.

Sensor type	Accuracy	Max. change in width
SMI-HE / 150	+/- 1 mm	300 mm
SMI-HE / 300	+/- 1 mm	600 mm
SMI-HE / 500	+/- 1 mm	1000 mm
SMI-HE / 750	+/- 1 mm	1500 mm
SMI-HE / 900	+/- 3 mm	1800 mm



Sensor type	Accuracy	Max. change in width
SMI-LE / 500	+/- 3 mm	1000 mm
SMI-LE / 750	+/- 3 mm	1500 mm
SMI-LE / 900	+/- 3 mm	1800 mm