

SENSOR SYSTEM »bd-2« – INLINE THICKNESS MEASUREMENT OF METAL SHEETS

Technology

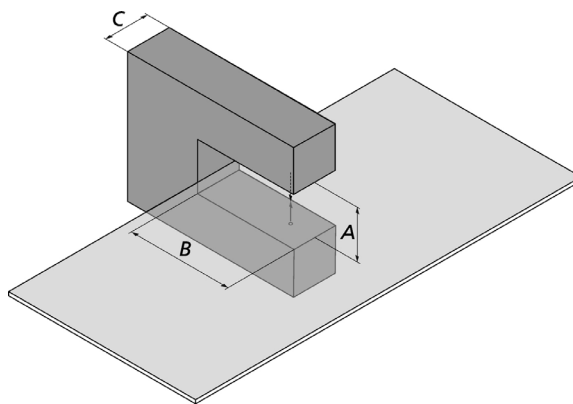
Fraunhofer ILT has developed a novel sensor for thickness measurements in the metal processing industry. The thickness measurement system »bd-2« consists of two interferometric sensors and a C-frame. The sensors measure the metal sheet passing through to determine the exact thickness. In contrast to radiometric methods the real geometric thickness of the product is measured and not an indirect value, which has to be converted on the basis of the material composition.

The contactless measuring process is suited especially for fast inline measurements of moving objects. The measuring beams run forth and back along the same line. Due to this bidirectionality the measuring heads are compact, fixed in a stable manner at the C-frame and equipped with minimal sized optical windows. Data transfer is accomplished in a pure optical way via fiber optics with lengths up to 15 m from the C-frame to a separate control unit. The sensor »bd-2« is made for industrial applications under rough ambient conditions. The optical access withstands even the strongest loads.

Thickness Measurement of Metal Sheets and Foils

- Thickness measurement of rolled sheets
- Thickness measurement of cold rolled strip, metal foils
- Steel, aluminum, copper a.o., dark to polished surfaces

Thickness Measurement System »bd-2«



Specifications

Measuring frequency	70 kHz
Measuring range	7.5 mm
Precision	< 100 nm
Dynamics	60 dB
Laser sources	2
Wavelength	850 nm
Beam guiding	bidirectional
Length of fiber optics	15 m
Size of control unit	600 x 520 x 420 mm ³

C-frame, exhibit »bd-2« (CONTROL 2013)

Free gap A	180 mm
Depth B	280 mm
Extension of C-frame C	200 mm
Size	540 x 680 x 200 mm ³
Weight	65 kg

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1 Robust housing of »bd-2« made of stainless steel.

2 Measurement under rough ambient conditions.