PRÜFTECHNIK

# EDDYSENSOR

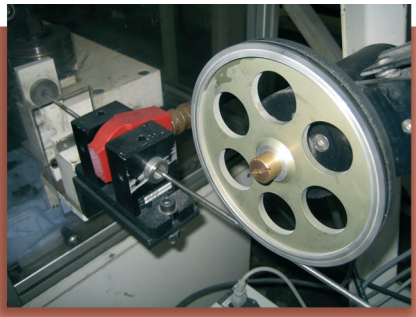
## Basic detector for process control and automation

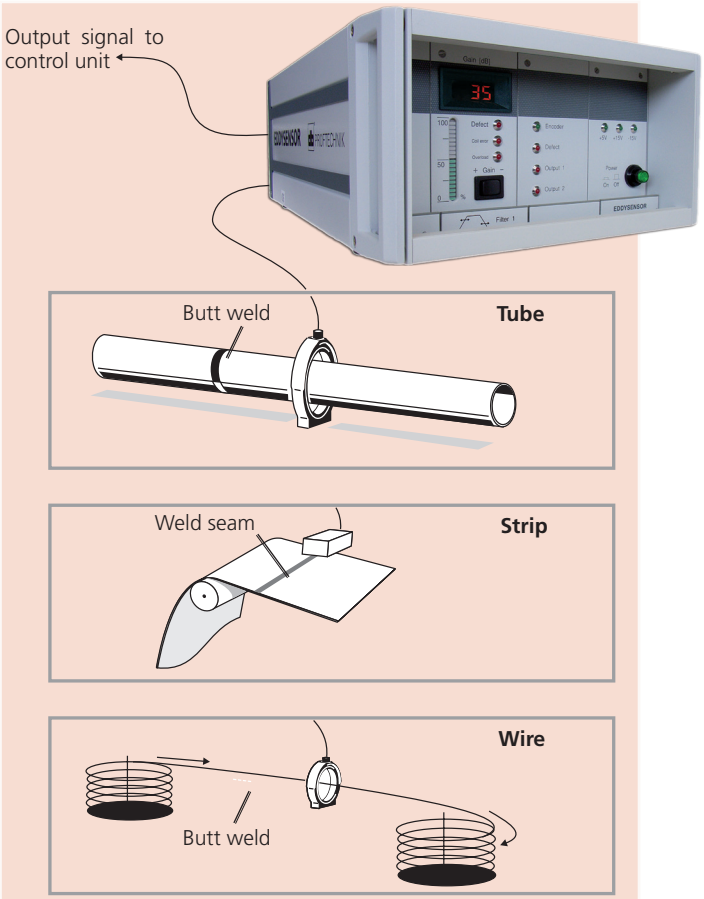

- Seam & splice detection
- Welding line monitoring
- Process reliability

# The best solution for detecting seams and splices

## Butt welding

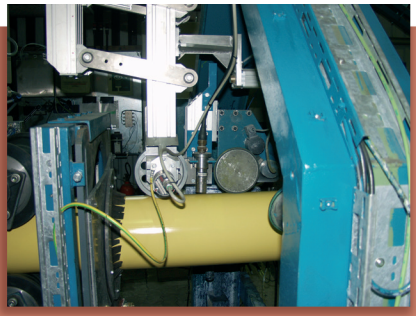
Butt welds cannot be identified by simple detectors such as light barriers or proximity switches. EDDYSENSOR locates butt welds of tubes, strips, bars or wire using eddy current testing methods and transmits a signal to the control unit.

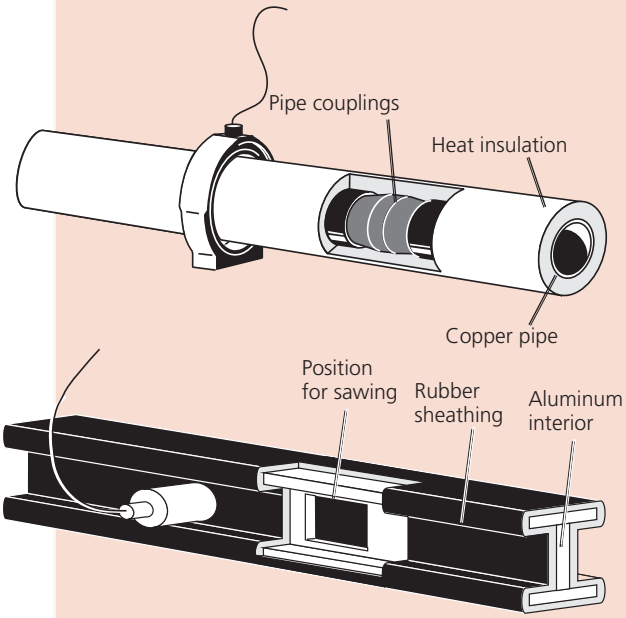





## Coating processes

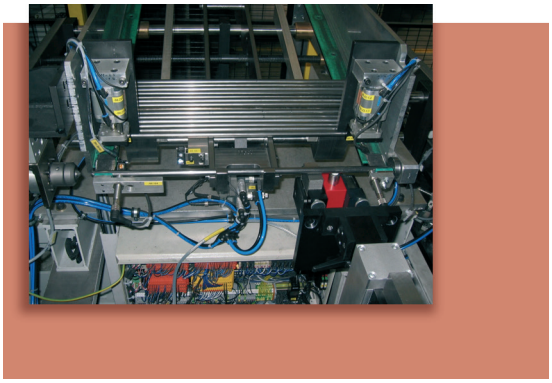
When insulation or other material surrounds tubes or rods, the joints between the individual pieces become invisible to standard sensors.
The EDDYSENSOR uses eddy current technology to pass through the coating and detect the discontinuities in the metal within. It transmits delayed or undelayed signals to a saw or marker, which can then cut or mark the piece at the correct point.

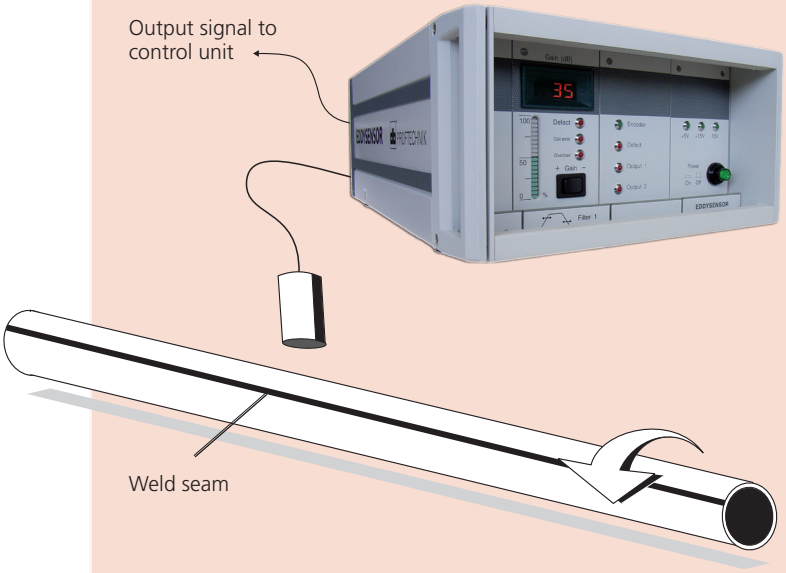




## Weld seam positioning

EDDYSENSOR can be used for detecting weld seams of tubes or other cylindrical test pieces for exact positioning. This detection method can be applied in tube bending machines or other automation processes.

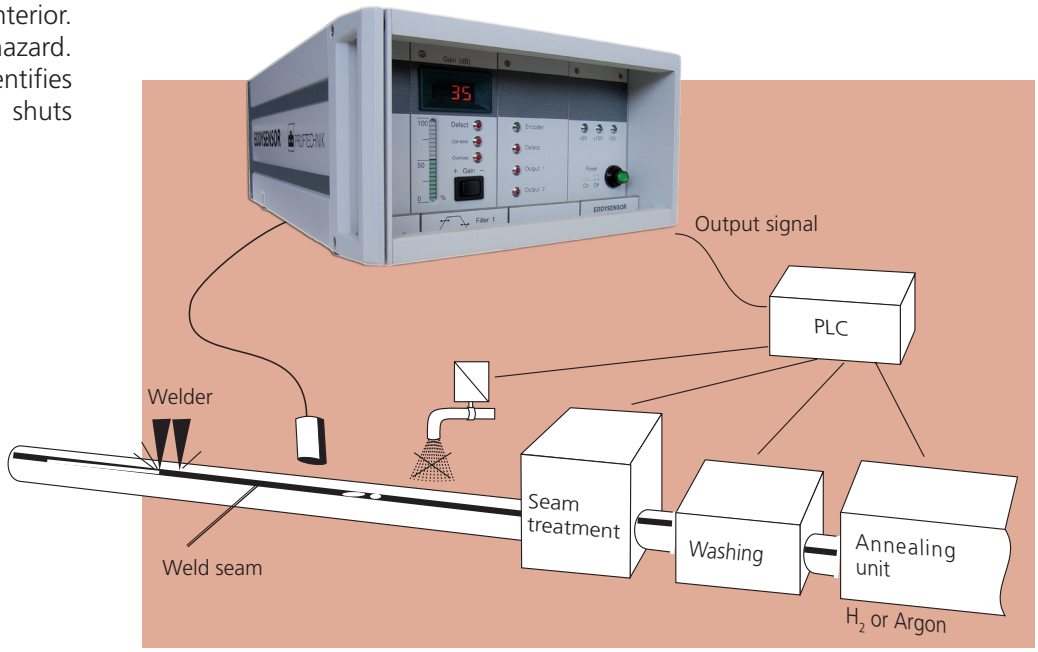





# Making welding lines safe and effective

## Welding lines with annealing units

Explosions are a constant risk in annealing lines due to cooling water or gas leaking through holes in the seam weld into the tube interior. EDDYSENSOR eliminates this hazard. After welding, the detector identifies any holes and automatically shuts down the cooling water.



# Reliable semi-finished product testing

## Technical data

### Applications

- In general: Any elementary detection problems in which a standard sensor such as a proximity switch or light barrier is not applicable; may be used for all metal sections, ferrous and nonferrous
- Annealing lines: Detection of holes in the weld seam in order to shut off cooling water to prevent water from entering the inside of the tube
- Butt welding processes: Detection of butt welds joining tubes and bands
- End-to-end testing: Detection of the start of a new test piece.
- Coating processes: Detection of internal features such as connectors and holes that are covered by insulation, rubber, etc.

**Speed range**
- 0.5 m/min – 1200 m/min (1.64 – 3937 ft/min) depending on type of production

### Frontend unit

**Frequency**
- Separate modules for the following frequencies: 5, 10, 20, 50, 100 and 250 kHz

**Filter**
- 4th-order high and low pass (Filter 1); 20 steps each (256 steps when remotely controlled)
- 2nd-order high and low pass (Filter 2); 20 steps each (256 steps when remotely controlled)
- 2nd-order band pass, 2-step (Filter 3)
- Other filters available on request

**Amplification**
- 0–55 dB in steps of 1 dB
- Shown on digital display

**Input**
- Signal from test coil or probe

**Outputs**
- Analog defect signal (0–10 V) for representing signal on a recorder or oscilloscope
- Potential-free OCO, e.g. for connection to PLC for further processing such as marking or sorting

**Signal evaluation**
- Signal evaluation over a single threshold fixed at 50% of maximum signal height
- Signal strength adjustable via gain

**Display**
- Two-color bar graph display

**Indicator LEDs**
- Overload
- Defective coil or connection
- Defect occurred

### Power unit

- 115 V/230 V +/– 15%; 50/60 Hz
- Mains suppression filter and isolating transformer
- Power consumption: 100 VA

### Delay unit (optional)

**Inputs**
- 24V
- Encoder, potential free

**Potential-free outputs**
- 2 delayed outputs, e.g. for marking and sorting
- 1 undelayed output, e.g. for warning
- 1 undelayed output indicating that the equipment is ready for testing

**Indicator LEDs**
- Encoder pulses
- Input of defect signals
- Delayed defect signal output, e.g. for marking
- Delayed defect signal output, e.g. for sorting

### Housing

- Environmental protection IP 42
- Shielded housing and internal power supply filter to prevent interference
- Optional door
- Dimensions (H x W x D): 132.5 x 235.4 x 402 mm (5 1/4" x 9 1/4" x 15 7/8")

**Operating conditions**
- Temperature range: 0 – 40 °C (32 – 104 °F)

### Sensor technology

- Any encircling coil, segment coil or probe

### Input and output units

**Encoder**
- Resolution: 10,000 µm/pulse
- Operating temperature range: 0 – 70 °C (32 – 158 °F)

**Marker**
- Air pressure marker
- Heat resistant ink and paint
- Power supply: 24 V



PRÜFTECHNIK NDT GmbH
Am Lenzenfleck 21
85737 Ismaning, Germany
Tel.: +49 89 99 616-0
Fax: +49 89 967990
ndt-sales@pruftechnik.com
www.ndt.pruftechnik.com

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