

## In-Line Quality Control



### Challenges

- Detecting contamination and faulty seals to enable product rejection
- Identifying and analyzing recurring sealing defects
- Lack of space for additional quality control units in the production line

### Solution

- Pixel-precise live monitoring of energy consumption and temperature
- Traceability of process changes/faults with energetic impact
- AI-driven seal monitoring for precise anomaly detection
- Continuous training process with automatic adjustment
- Definition of variable tolerance ranges based on product requirements
- Real-time quality assessment with immediate rejection of faulty products

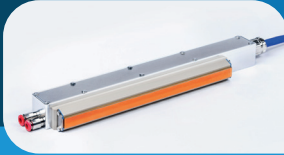
### Benefits

- Full machine integration
- No additional quality control station
- No additional sensors
- Process and product-specific fine-tuning of model sensitivity
- Pixel-precise error root cause analysis
- User-friendly HMI

# Potential Use Cases

\*Detection depending on product & setup – let's find your best-fit solution!

## Matrix Sealing Jaw



Early detection of serial defects

- Product contamination (solid, pieces, liquid) in the seal seam
- Slipped or incorrectly aligned film
- Double film layers during film feed (e.g. when changing formats)
- Twisted or missing zipper
- Tilted or incorrectly aligned sealing jaws

## Sealing Head



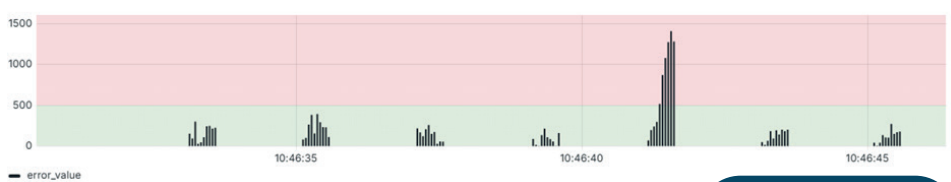
Precise ejection of affected products

- Product contamination (solid, pieces, liquid) in the seal seam
- Double lids / folded lids
- Missing or incorrectly positioned lids

### Power Usages



### Anomaly Score



\*5th sealing was a double lid during production of margarine cups



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