

AUREX
Ultrasonic systems



AUREX

Using the latest ultrasonic technology, AUREX products enable pipe manufacturers around the world to improve product quality and increase process and quality data transparency. From thin hoses to thick-walled pipes, AUREX covers a wide product range and convinces with unparalleled flaw detection and adaptability. Digitization and automation of extrusion lines is a must to meet the increasing quality and sustainability targets of end users and regulatory standards.

INSPIRE

beyond measurement



WE GIVE EXTRUSION TECHNOLOGY A FRESH APPROACH

For more than 40 years, the name „iNOEX“ has been associated with pioneering technology and ground-breaking inventions for measurement and control technology. With innovative strength, a willingness to push boundaries and a wide range of products and services, we aim to inspire our customers.

Based on our values and principles, our cooperation is characterized by a clear mission statement and a focus on customer needs. We work on this every day with enthusiasm and passion.

As pioneers and experts, we offer our customers added value in the pipe, hose, film, cable, and profile extrusion industry. Our high-quality products, equipped with outstanding user-friendliness, offer intelligent and innovative solutions that stand as key factors for sustainable success.

WE INSPIRE THROUGH INNOVATIONS

Ultrasonic measuring technology is one of the proven technologies of the iNOEX company. The AUREX systems meet the highest standards in terms of quality assurance, cost-effectiveness, and productivity in the production of plastic pipes. The innovative technology is a key element in meeting these requirements - today and in the future.

The AUREX product series stands for high accuracy and easy operation in wall thickness and diameter measurement. Single-layer and coextruded tubes and hoses can be reliably measured down to a minimum layer thickness of 0.02 mm. The AUREX technology is based on the interaction of measurement and control. This ensures a uniform, continuous and overall stabilization of the production process and efficient production.

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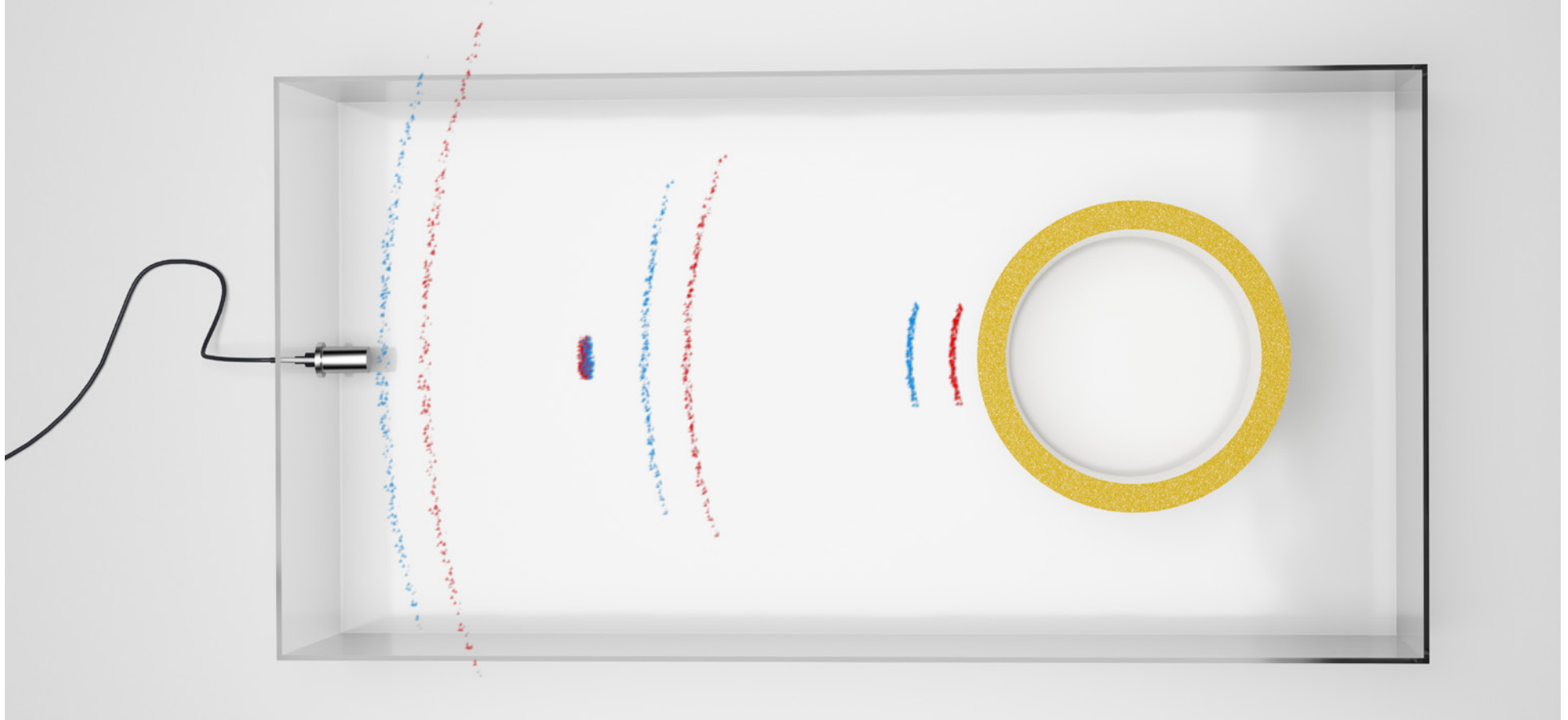
WE ARE COMMITTED TO SUCCESS

When you choose iNOEX, you get not only outstanding products but also individual service solutions. We offer service at the highest level and competent support throughout the entire product life cycle. We are always there for you - worldwide and at any time.

With our manufacturing know-how and experience, we identify potential, determine the most suitable technology, and optimize your processes. With comprehensive services to improve your efficiency and production performance, your success is our target.

Customer satisfaction is our top priority. We always think and act with our customers in mind. Our expert service supports you quickly, reliably, and competently. We are there for you personally - via service hotline or directly on site.

#iINSPIRATION #iINNOVATION #iINTEGRITY



AUREX

Ultrasonic sensor technology

In ultrasonic measurement, signals of the ultrasonic frequency range are generated, transmitted, received (echoes) and then processed and evaluated. Based on the transit time measurement of the reflecting ultrasonic echoes at the outer and inner pipe wall as well as at the potentially existing boundary surfaces (in case of multilayer pipes), the individual layer thicknesses can be calculated. This requires the coupling medium of water, as well as precise, digitized ultrasonic evaluation electronics.

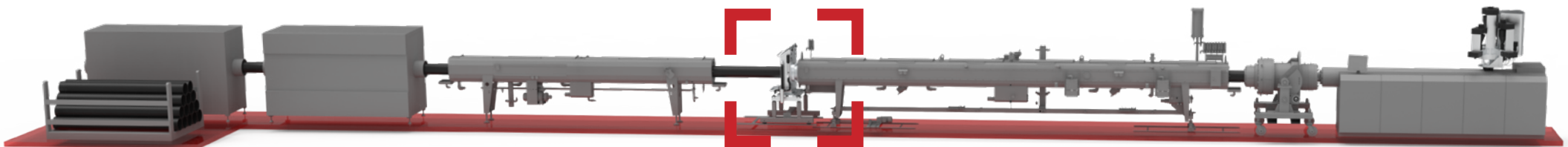
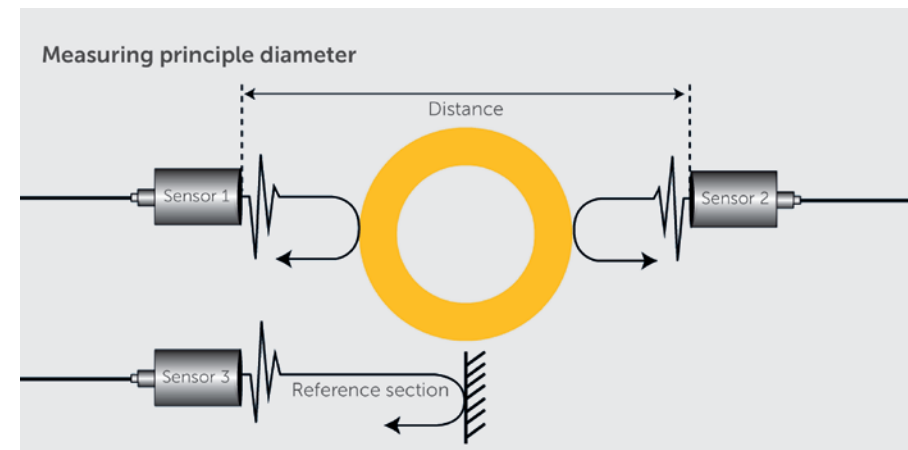
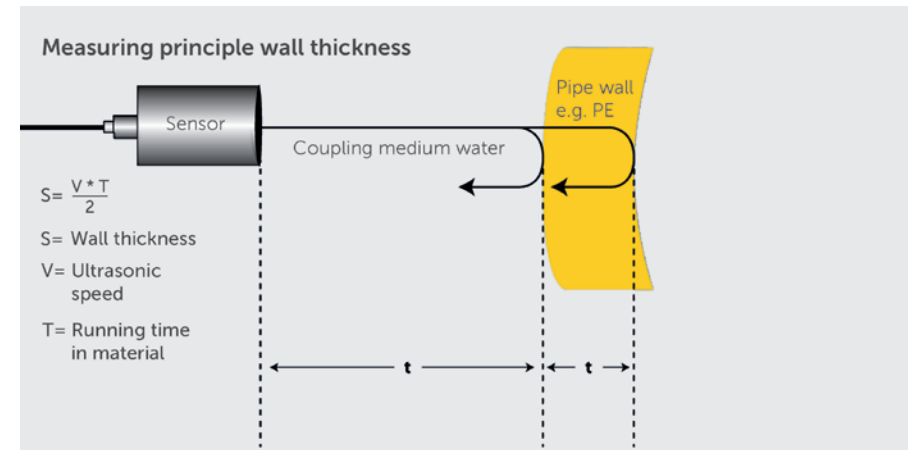
The AUREX ultrasonic systems combine a high accuracy and simple operation for wall thickness and diameter measurement. This means that single-layer and coextruded pipes and tubes can be reliably measured down to a layer thickness of at least 0.02 mm.

The interaction of measurement and control ensures overall stabilization of the production process and an efficient production. The early detection of thin and thick sections and the corresponding adjustment at the die leads to a further reduction of production costs.

The AUREX systems are available for geometry measurement from 0.5 - 3,000 mm diameter and for 100% wall thickness measurement and flaw detection up to 630 mm diameter.

ADVANTAGES AND FEATURES

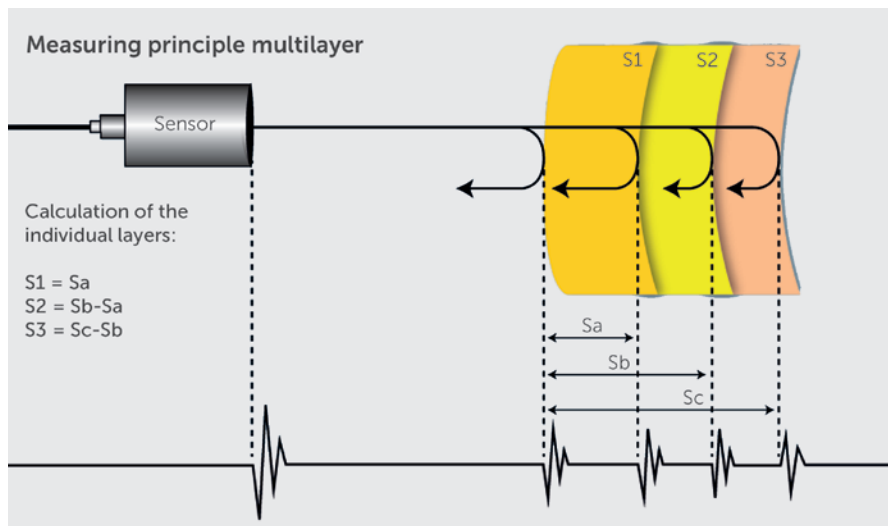
- Detailed product information (wall thickness, diameter, eccentricity, ovality)
- Process automation through control of wall thickness, diameter, weight per length and mass throughput
- Thin-point control in combination with SAVEOMAT gravimetric systems
- Consistent production due to constant wall thickness and centering of tubes and hoses
- Material savings of up to 5%
- A water filter is supplied with each ultrasonic system



AUREX MK

The AUREX MK is the complete solution for pipe dimensions from 0.5 - 400 mm. It enables compliance with the specified tolerances for wall thickness, eccentricity, diameter and ovality. Thanks to the combination of high-quality electronics with innovative measuring methods, up to 7 layers from 0.02 mm wall thickness can be evaluated.

In addition to the standard measurement for control and visualization of the product, the „Fast Specification Check MK/AFM“ is optionally available, which allows a fast wall thickness check. Since the AUREX MK does not completely cover the pipe at the circumference, this wall thickness check can be used, for example, to detect typical thin section rings caused by jerking of the produced pipe at the entire circumference



AUREX MK 20

- For installation in a water-flooded customer tank with internal dimensions larger than 150 x 150 mm
- No further seals required
- The two-part guides can be inserted after start-up
- A threading slot is available for small diameters

AUREX MK 400

- Large working range without sensor adjustment
- Extremely narrow design in extrusion direction, the measuring chamber is quickly filled with water and ready for use
- Thanks to the low weight, direct flange-mounting on the tank is possible without a base frame
- Folding device for easy change of the seal packages (changeover time within a few seconds)
- Tool-free changing of the seal packs via quick-release fasteners
- Pipe centering via double cone rollers, operated by a hand crank
- Integrated water filter prevents system contamination
- Sensor and sensor cable exchange possible during production

AUREX MK 400
PRODUCT VIDEO

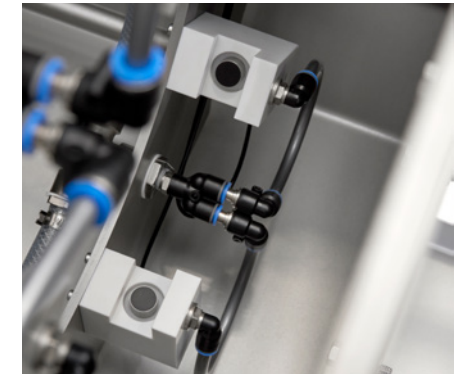
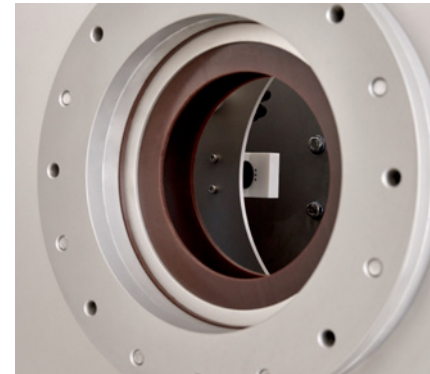
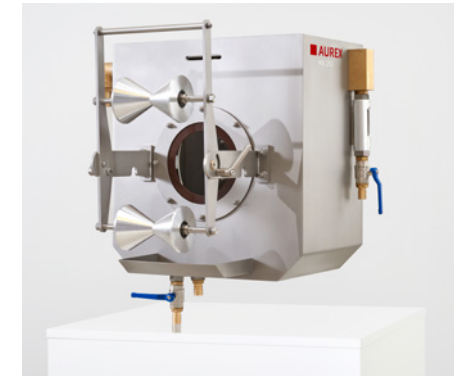
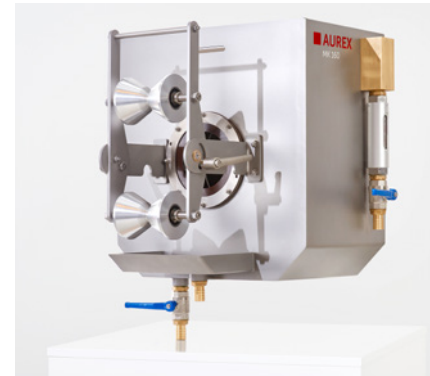


AUREX MK 32, MK 63, MK 125

- Simple assembly in a water basin
- Pipe guidance is ensured by means of half-shells which fall out automatically if the product becomes thick, thus preventing damage to the system
- A folded version is optionally available for MK 32 and MK 63



AUREX MK 160, MK 250



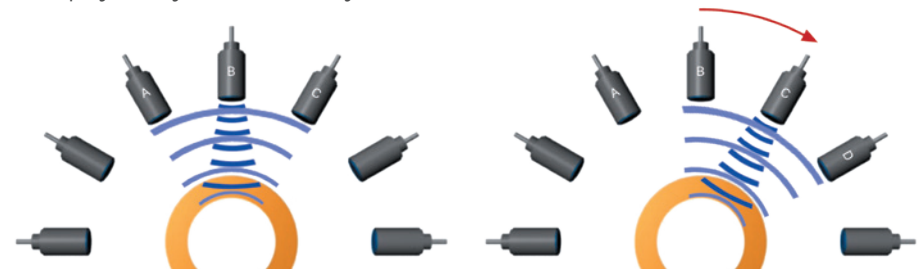
- Simple installation in a water tank
- The double seal at the inlet allows the measuring chamber to be flanged directly to the vacuum or cooling tank via a closed as well as an open adapter
- The easy-to-operate pipe guide via double cone rollers can be adjusted after start-up via a tilting device

AUREX ERS PRODUCT VIDEO

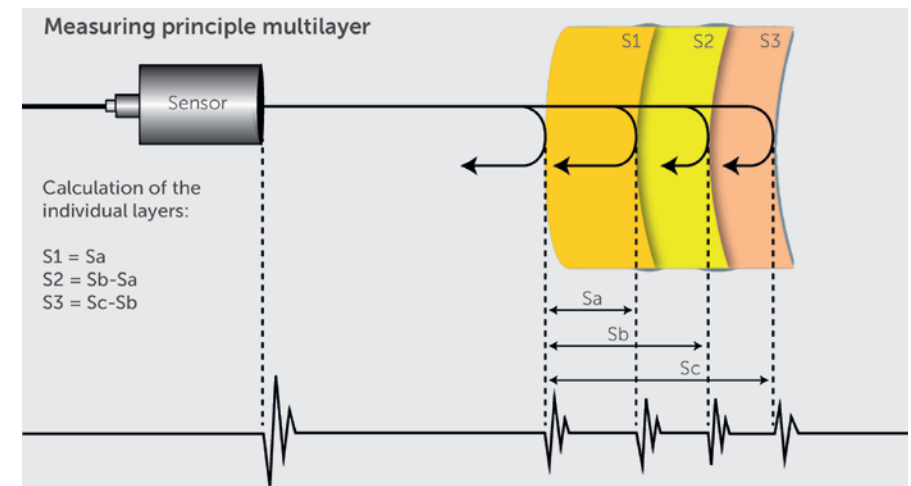


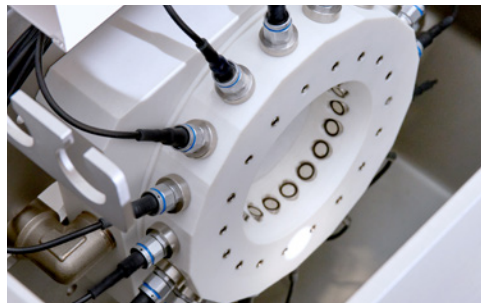
AUREX ERS

The AUREX ERS uses the measuring technique of the Electronic Rotating Scanner (ERS) principle. With this active-passive measurement, every point of the measured object is detected 100% in longitudinal and circumferential direction, so that even minimal tolerance deviations are detected. Coextruded layers can also be detected as soon as they are physically detectable by ultrasound.



The AUREX ERS is complemented by the optional „Quality Check“, a wall thickness error check. The „Quality Check“ detects anomalies on the surface, in the material and on the inner surface of the pipe.





ADVANTAGES AND FEATURES

- 100 % wall thickness measurement for pipe dimensions up to 630 mm in diameter
- Electronic rotation up to 16,000 rpm
- Evaluation of vertical and angular signals reflected from the tube by activating adjacent sensors
- Highest measuring resolution and identification of smallest production variations
- Integrated self-diagnosis and optimal adaptation of the measurement to the various measuring tasks



AUREX AFM

The AUREX AFM measuring chambers are flanged directly to the outlet of the vacuum tank. With up to 24 sensors a reliable and precise ultrasonic measurement with a centric pipe guidance is guaranteed. The measuring chambers are available for a diameter range of 63 - 630 mm. The AUREX AFM performs wall thickness and diameter measurement in parallel according to the number of sensors. The measurement data is documented for comprehensive quality verification. Since compliance with the tight tolerances for wall thickness, eccentricity, diameter and ovality is mandatory, detailed product information is available at any time.

Optionally, the AUREX AFM can be equipped with the „Fast Specification Check MK/AFM“, which enables a fast wall thickness check. Since the AUREX AFM does not completely cover the tube at the circumference, this wall thickness check can, for example, detect typical thin section rings, which are caused by jerks of the produced tube at the entire circumference.

ADVANTAGES AND FEATURES

- Large measuring range with measuring range extension
- Parallel measurement of wall thickness and diameter
- Very robust mechanics
- Separable adapter via quick release fasteners for easier seal change

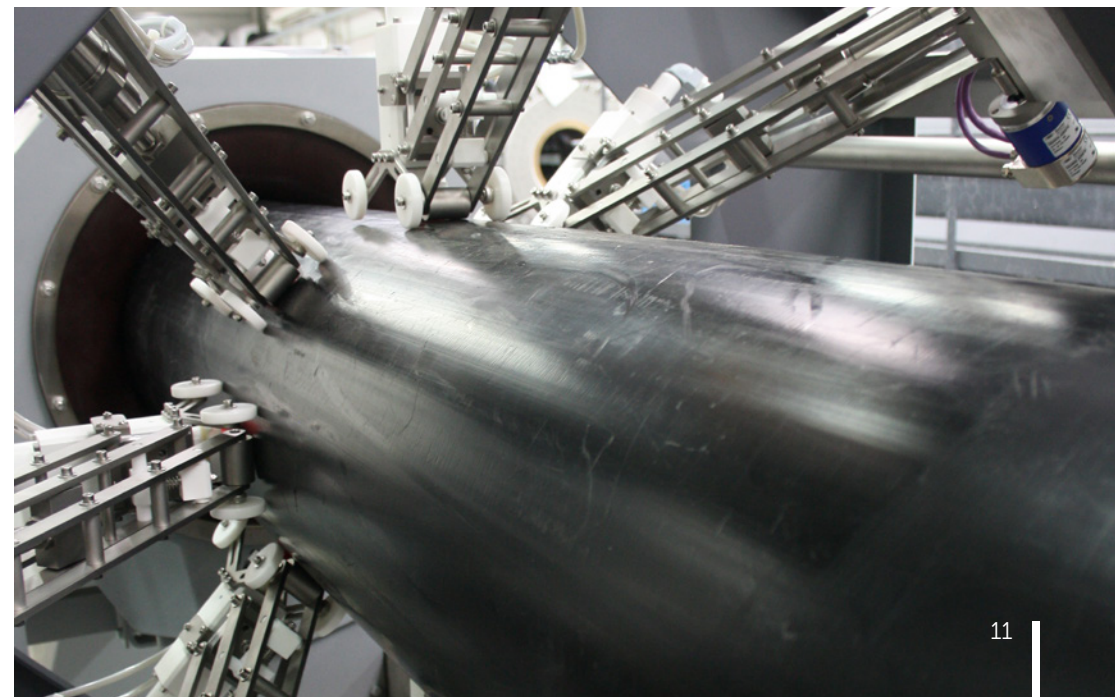
AUREX XXL

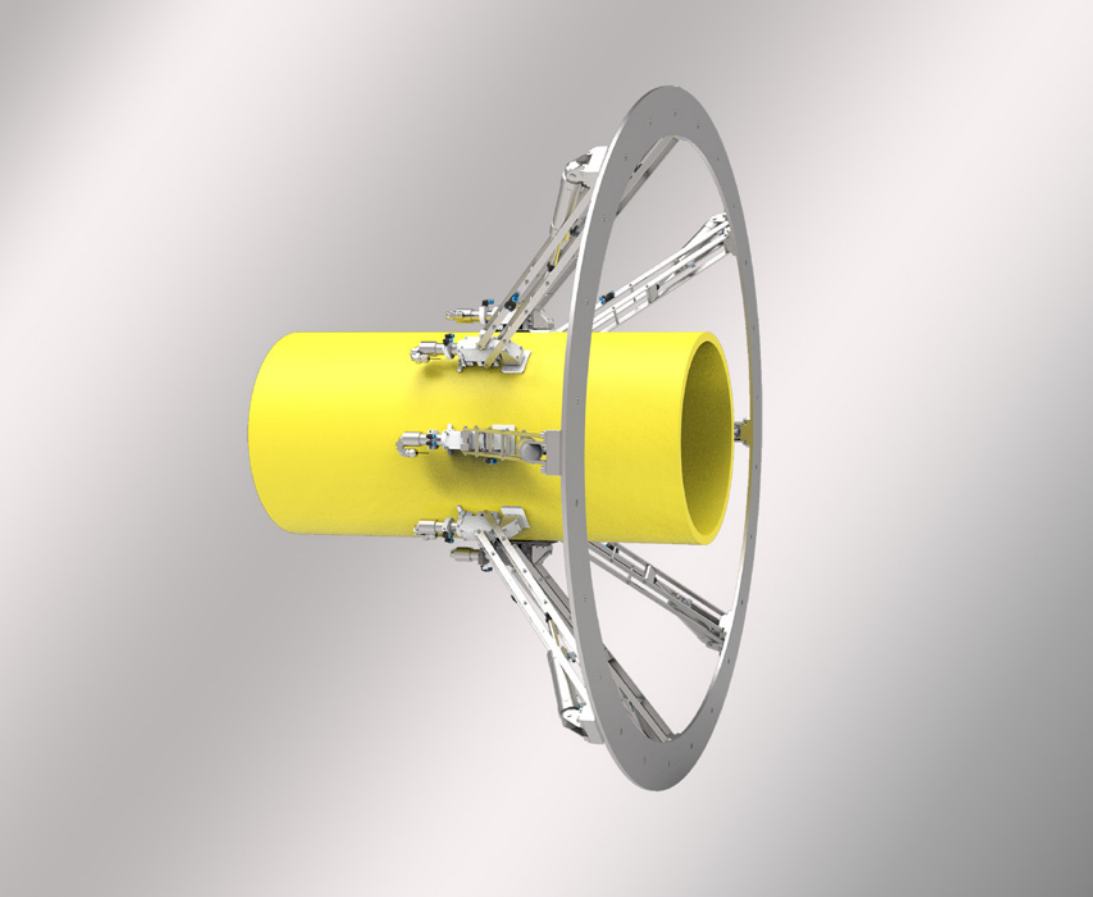
The AUREX XXL is the solution for large pipes with a diameter of up to 3000 mm. The system works with 8 water-coupled ultrasonic sensors that can be pneumatically adjusted. This is possible without conversion in case of a change of dimensions. Minimum wall thickness tolerances are obtained via the downstream control loops of the weight per length and thin point control and production is perfected. The better centering enables considerable material savings, especially for large pipes.



ADVANTAGES AND FEATURES

- Production quality assurance by measuring and controlling wall thicknesses and diameter
- Documentation of production
- Material savings of up to 5 %
- Large measuring range
- Proven measuring and control principles

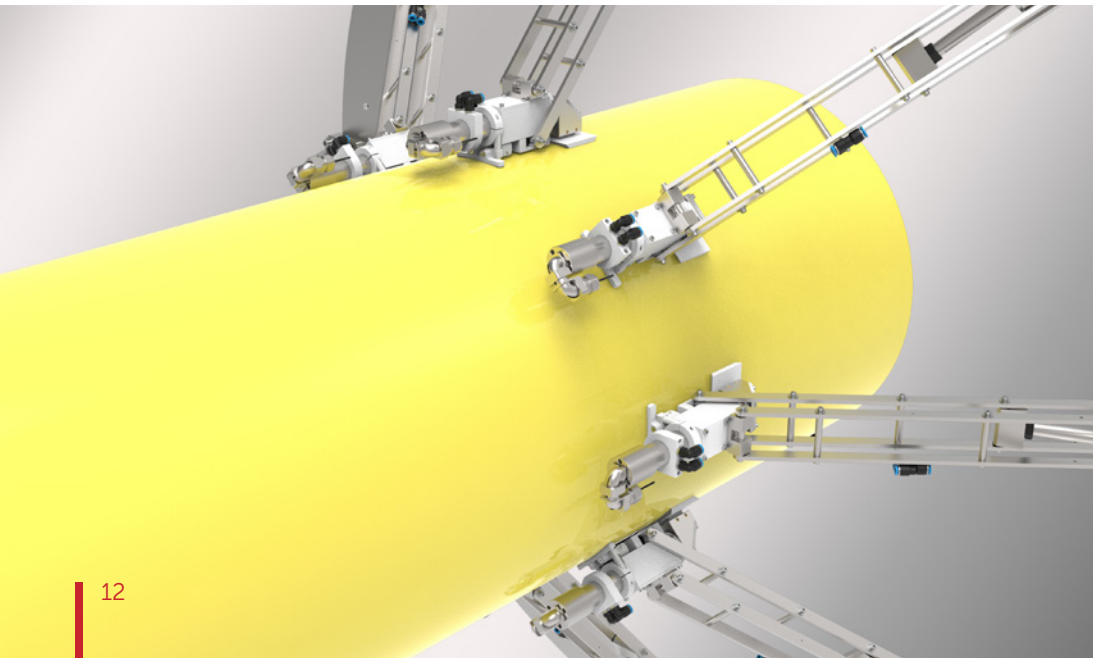




AUREX ECCO

AUREX ECCO is the efficient solution for fast pipe centering. Especially for thick-walled large pipes, with low line speeds and high mass throughput, the start-up process is difficult, time-consuming, and associated with high raw material costs.

ECCO makes it possible to measure the wall thickness distribution shortly after the pipe calibration. The ultrasonic sensors, which are mounted directly behind the calibration sleeve in the vacuum tank, are pneumatically and flexibly moved up to the respective pipe geometry after line start-up and adapted to the pipe. The measurement starts and all information on wall thickness distribution for fast die head centering is available. And this already after production of only a few meters. The calibration and the distribution of the wall thickness on the circumference can be stored dimension-dependent and is available again at the next start of the same pipe dimension.



ADVANTAGES AND FEATURES

- Significant reduction of start-up scrap
- Fast pipe wall centering
- Fast reaching of product specifications after product start-up
- Fast detection of product variations
- Uniform wall thickness distribution
- Suitable for PE, PVC, and PP with an outside diameter from 200 mm

Industrial Data Manager

powered by  iDOO

Our Industrial Data Manager facilitate comprehensive analyses and evaluations to identify optimization potentials and evaluate product-specific indicators. Installed as a virtual machine in your network, no additional hardware is required. The standardized process data interface OPC-UA transfers data from state-of-the-art measuring, controlling and automation solutions. Benefit from preconfigured and customizable dashboards and reports for each connected system and create diagrams, visualizations and data evaluations with Grafana. Export your data as .csv or .xls and keep track of live data on the database server. Use the Industrial Data Manager as a production floor monitor that provides cross-location statistics such as overall equipment effectiveness and process line capability.

*Drive digitalization and unlock the value of your data with iDOO.
Experience the future of the industry.*

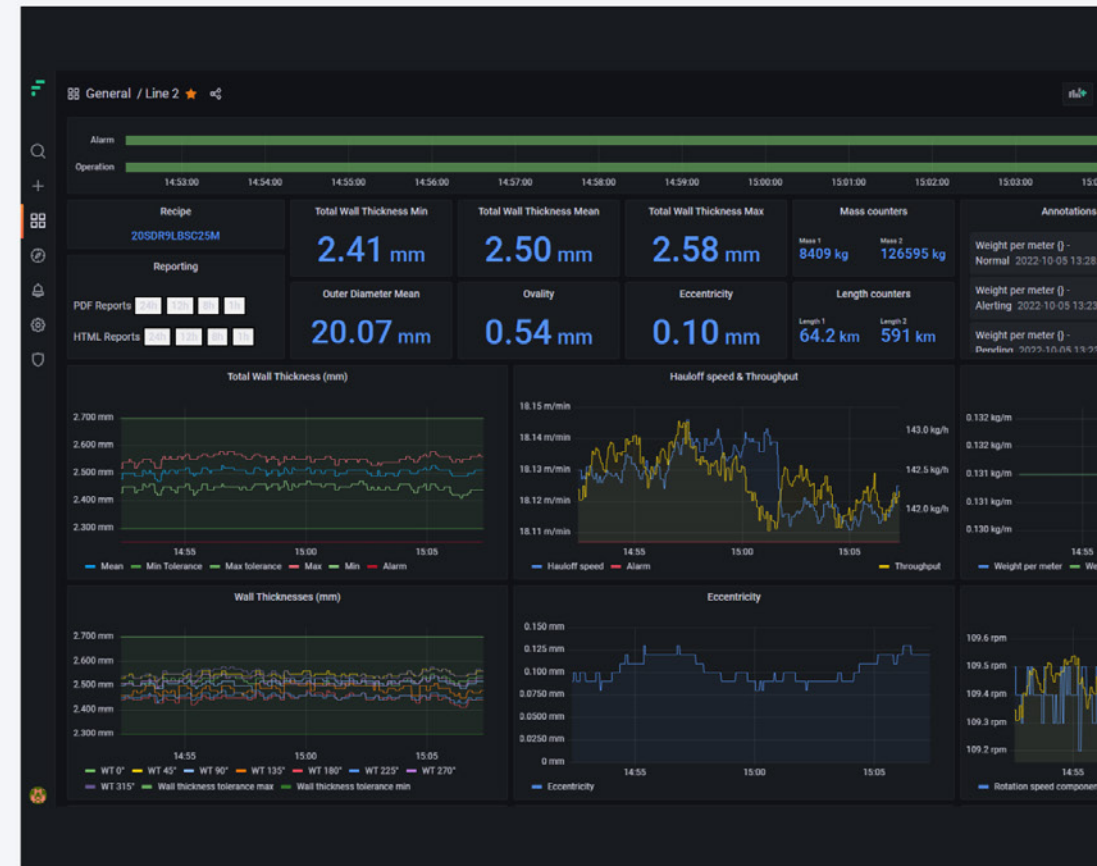
ADVANTAGES AND FEATURES

- Access to all production data
- Easy access via web browser
- Optimized for all mobile devices
- Support of quality assurance
- iDM gateway for integration with almost all types of interfaces
- Runs on almost any existing server hardware
- Data backup in case of network or server failures (up to 1 week)
- Intuitive user interface

More information



www.idoo.global



AUREX

Products at a glance

AUREX MK

| Type | Number of sensors | Pipe dimensions [mm] |
|---------------|-------------------|----------------------|
| MK 20 | 4 / 8 | 0,5 – 20 |
| MK 32 | 4 / 6 / 8 | 0,5 – 32 |
| MK 63 | 4 / 6 / 8 | 10 – 63 |
| MK 125 | 4 / 6 / 8 | 10 – 125 |
| MK 160 | 8 | 16 – 160 |
| MK 250 | 8 | 32 – 250 |
| MK 400 | 8 | 32 – 400 |
| | | |

AUREX ERS

| Type | Number of sensors | Pipe dimensions [mm] | Measuring range extension [mm] |
|----------------|-------------------|----------------------|--------------------------------|
| ERS 32 | 18 | 1 – 32 | — |
| ERS 63 | 24 | 10 – 63 | — |
| ERS 125 | 36 | 10 – 125 | — |
| ERS 160 | 30 | 32 – 160 | — |
| ERS 250 | 36 | 40 – 250 | — |
| ERS 400 | 36 | 225 – 400 | 90 – 225 |
| ERS 630 | 72 | 200 – 630 | 90 – 250 |
| | | | |

AUREX ECCO

| Type | Number of sensors | Pipe dimensions [mm] |
|------------------|-------------------|----------------------|
| ECCO 630 | 4/8 | 200 - 630 |
| ECCO 800 | 4/8 | 200 - 800 |
| ECCO 1200 | 4/8 | 250 - 1200 |
| ECCO 1600 | 4/8 | 609 - 1670 |
| ECCO 2000 | 4/8 | 1000 - 2000 |
| ECCO 2500 | 4/8 | 1500 - 2500 |
| ECCO 3000 | 4/8 | 2000 - 3000 |

AUREX AFM

| Type | Number of sensors | Pipe dimensions [mm] | Measuring range extension [mm] |
|----------------|-------------------|----------------------|--------------------------------|
| AFM 500 | 8 / 16 | 250 - 500 | 63 - 250 |
| AFM 630 | 8 / 16 / 24 | 315 - 630 | 75 - 315 |

AUREX XXL

| Typ | Number of sensors | Pipe dimensions [mm] |
|-----------------|-------------------|----------------------|
| XXL 800 | 8 | 200 - 800 |
| XXL 1200 | 8 | 250 - 1200 |
| XXL 1600 | 8 | 609 - 1670 |
| XXL 2000 | 8 | 1000 - 2000 |
| XXL 2500 | 8 | 1500 - 2500 |
| XXL 3000 | 8 | 2000 - 3000 |
| | | |

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