

K-300 Rotomat KT

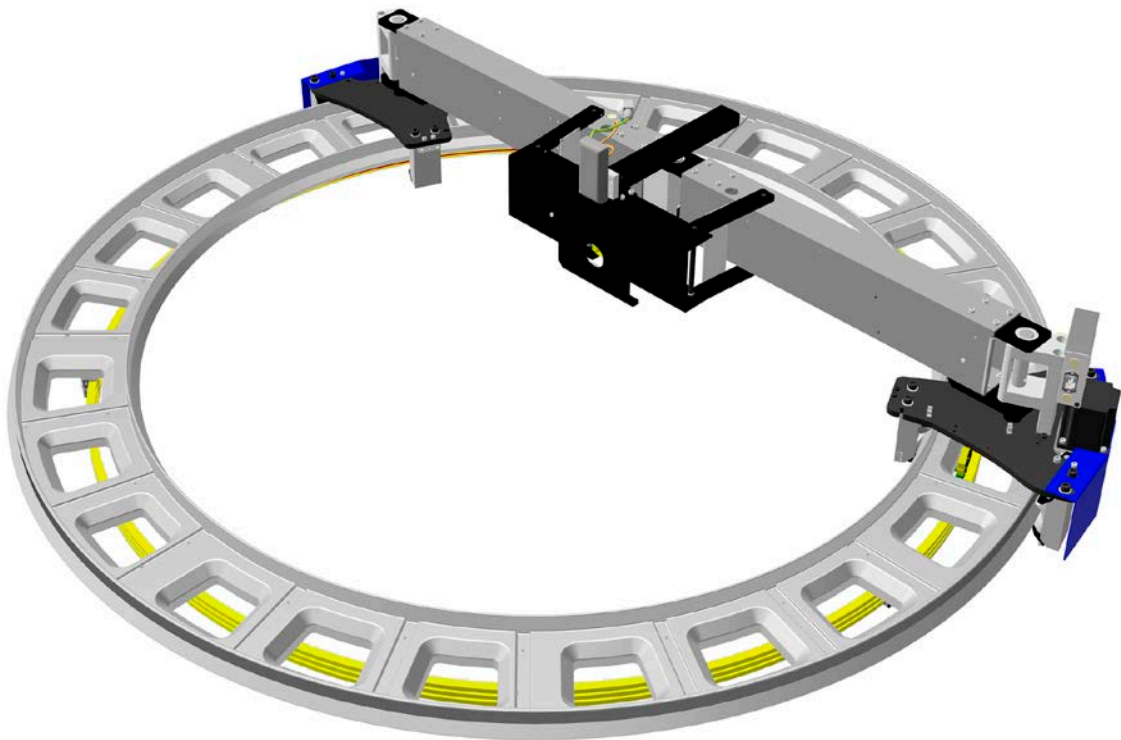
KÜNDIG CONTROL SYSTEMS
The Gauge Manufacturer for Film Extrusion  **SWISS
MADE**

Online Thickness Gauge

■ K-300 Rotomat KT

The K-300 Rotomat KT is an online film thickness gauge for blown film lines.

Rapid and accurate measurement of film thickness allows the film production process to be tightly controlled. This results in an enhanced film quality that is maintained during the entire production process. Optimizing film thickness profiles contributes to material savings. In addition, material waste during product changes is reduced.

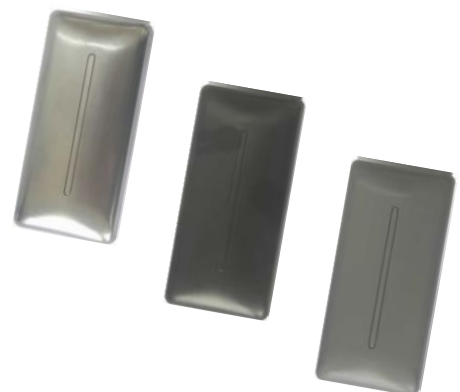


K-300 Rotomat KT

Several thickness sensors with different coatings can be used with the K-300 measuring electronic box. A quick disconnect allows to change the sensor in seconds.

The following standard sensor coatings are available:

- CRS** Chrome coated sensor for standard films. Excellent durability with abrasive films.
- PVD-2** Plasma coated sensor for slightly sticky films. Good durability with light abrasive films.
- PTFE** PTFE coated sensor for sticky films. Short lifetime with abrasive films.



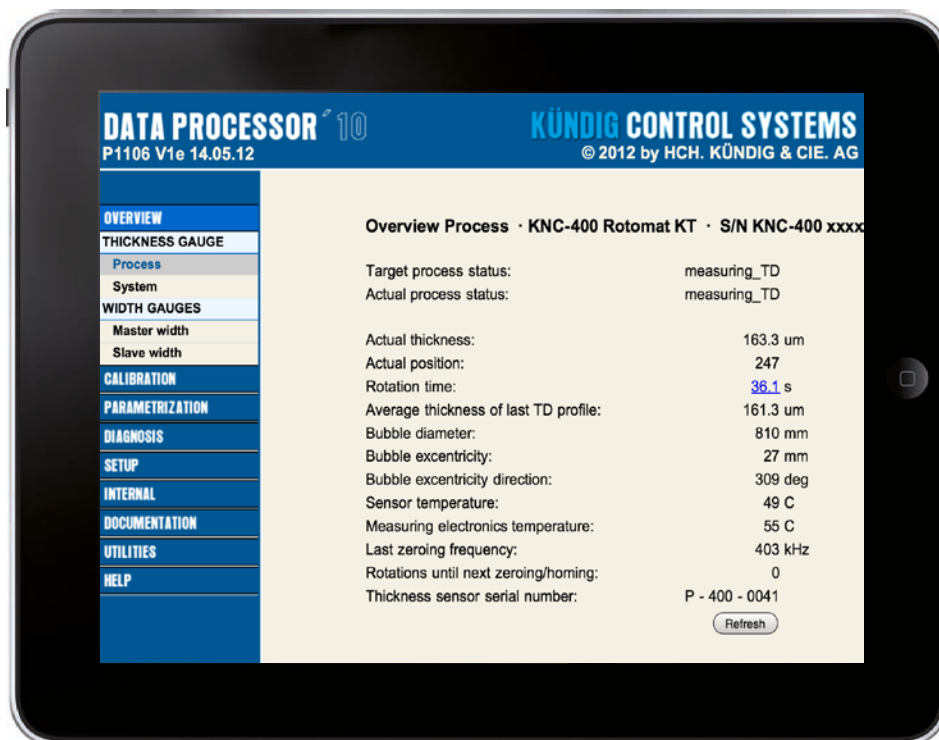
Further special coatings available upon request.

■ Rotomat KT - The all-new thickness gauge

Unique from regular scanners, the Rotomat KT rotates continuously in one direction. By eliminating the time required to change directions every 360 degrees, a quick rotation time of 36 seconds is possible on our standard size scanners.

By never changing direction, wear and tear of the mechanical drive components is reduced thereby extending the service life. In addition, the continuous movement requires less power.

The data processor features a LCD panel and a numerical keyboard as easy accessible user interface. A simple setup menu allows to check and adjust process parameters.



Web Interface DP'10

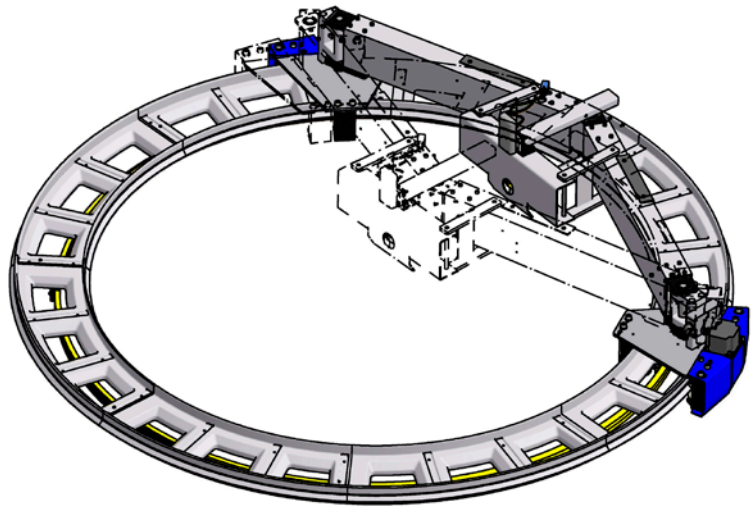
The data processor comes with a user friendly web interface, which allows output of process data and thickness profiles, as well as system configuration and troubleshooting. Remote access to the data processor through the internet is also available.

If a PC is connected to the data processor's Ethernet port, any internet browser can be used to check process data, to visualize the thickness profiles, adjust the process parameters view error diagnostic data. Furthermore, there is direct access to the technical documents of the respective system.

■ Standard sizes

Using the bending traverse technology a very wide range of bubble size can be covered with a small space requirement. It takes only four different installation sizes to measure anything between 255 and 3900 mm layflat.

Both arms of the bending traverse are moved by a recirculating ballscrew. That allows a much faster movement in radial direction compared to systems with telescopic or linear adjustments.



| Size [mm] | Layflat range * min. - max.[mm] | Bubble diameter min. - max. [mm] | Surrounding diameter [mm] |
|-----------|---------------------------------|----------------------------------|---------------------------|
| 1200 | 255 - 1800 | 80 - 1200 | 2200 |
| 1730 | 505 - 2600 | 240 - 1730 | 2800 |
| 2130 | 865 - 3200 | 470 - 2130 | 3200 |
| 2600 | 1150 - 3900 | 650 - 2600 | 3700 |

* 4 % shrink and 40 mm wobbling considered

■ Special sizes for big bubbles

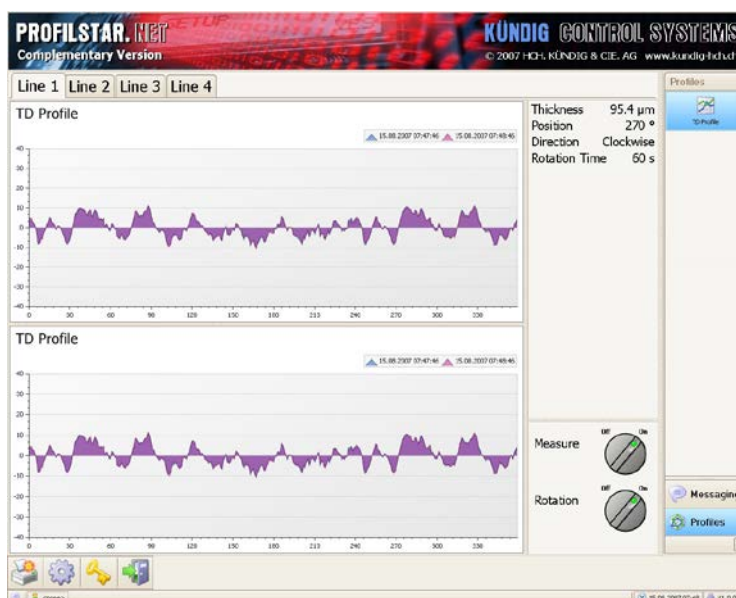
For those applications where greater than 4000mm layflat is produced, such as agricultural and geomembrane films, we offer custom made units.

For very large units, we recommend a fixed traverse to maintain mechanical stability. We can cover virtually any range and size. Standard components are utilized which allows us to offer custom solutions with the best cost/performance ratio.

■ Connections and interfaces

PROFILSTAR.NET

The PROFILSTAR.NET is a complete visualization system for process optimization and quality control. Up to 16 lines, equipped with Kündig thickness gauges and / or layflat control systems, can be connected to one PROFILSTAR.NET unit.



PCD-LINK via RS-422 or UDP/IP Ethernet

The proven PCD-LINK protocol, used for the communication between control system and any Kündig measuring device, is available via UDP/IP Ethernet and also as RS-422 with the new data processor. So it is still compatible with existing host computers but at the same time offers a new and very cost efficient version.

Both ports can be used at the same time, for example one port for the control system and the other port to record the data.

KCS-API and KCS-Process

For a fast and easy integration of Kündig measuring devices into Windows based control systems, we now offer a KCS-API (Application Programming Interface) in the widely used programming language C. The KCS-API is delivered as a DLL (Dynamic Link Library) and a KCS Process (Windows application) that acts as a driver.

Analog output / Digital signals

Still available is a connection with an analog signal. In this case, the measured thickness value is transmitted as an analog signal, while the rotation signals are presented in a digital form. Digital inputs can be used to control the thickness gauge.

■ Technical data K-300 Rotomat KT

Electrical interface values

| | |
|------------------------|-------------------------|
| Power supply | 110 - 240 VAC, 50/60 Hz |
| Power consumption | max. 100 VA |
| Nominal current | 0.3 A |
| Switch-on peak current | 1.5 A |

Ambient temperature

| | |
|-----------------------|-----------------|
| Data processor | max. 40 °C |
| Measuring electronics | max. 70 °C |
| Measuring head | max. 120 °C |
| Transport and storage | -40 °C to 70 °C |

Thickness measurement

| | |
|---|---|
| Measuring principle | Capacitive thickness measurement Suitable for all electrically non-conducting material |
| Measuring frequency | 400 to 450 kHz |
| Measuring range | 5 to 300 µm > 300 µm on request |
| Measuring interval | 30 ms |
| Resolution | 0.1 µm |
| Accuracy after calibration | 5 to 10 µm ⇒ 0.1µm > 10 µm ⇒ 1% |
| Linearity within range of calibration thickness (± 10%) | better than 2% |

Ambient conditions

| | |
|---------------------|-----------------------------|
| Ambient temperature | 23 °C ± 2 °C |
| Measured film | LDPE-film, at 50 °C approx. |

■ Calculation of amortization

$$\begin{array}{|c|} \hline \text{Material output} \\ \hline \text{_____ kg/h} \\ \hline \end{array} \times \begin{array}{|c|} \hline \text{Operation time} \\ \hline \text{_____ h/day} \\ \hline \end{array} \times \begin{array}{|c|} \hline \text{Operation time} \\ \hline \text{_____ days/year} \\ \hline \end{array} \times \begin{array}{|c|} \hline \text{Material price} \\ \hline \text{_____ €/kg} \\ \hline \end{array} = \begin{array}{|c|} \hline \text{Material throughput} \\ \hline \text{_____ €/year} \\ \hline \end{array}$$

$$\begin{array}{|c|} \hline \text{Material throughput} \\ \hline \text{_____ €/year} \\ \hline \end{array} \times \begin{array}{|c|} \hline \text{Optimization} \\ \hline \text{_____ \% / 100} \\ \hline \end{array} = \begin{array}{|c|} \hline \text{Material savings} \\ \hline \text{_____ €/year} \\ \hline \end{array}$$

$$\begin{array}{|c|} \hline \text{Investment} \\ \hline \text{_____ €} \\ \hline \end{array} : \begin{array}{|c|} \hline \text{Material savings} \\ \hline \text{_____ €/year} \\ \hline \end{array} = \begin{array}{|c|} \hline \text{Amortization time} \\ \hline \text{_____ years} \\ \hline \end{array}$$

■ Questionnaire application technology

Company

Address

Zip Code

City

Country

Contact person

E-mail

Phone

Fax

We are interested in

- | | |
|---|--|
| <input type="checkbox"/> Online thickness gauge | <input type="checkbox"/> Width measurement |
| <input type="checkbox"/> Online thickness gauge and automatic profile control | <input type="checkbox"/> Width measurement and control |
| <input type="checkbox"/> Offline system for film thickness | <input type="checkbox"/> Meter weight control |

Specifications of existing line

- Film width: Min. _____ mm Max. _____ mm
- Film thickness: Min. _____ μ m Max. _____ μ m
- Throughput: Min. _____ kg/h Max. _____ kg/h
- Line speed: Min. _____ m/min Max. _____ m/min
- Extrusion: Monoextrusion Coextrusion __ Layers
 __ Components __ Components per layer
- Processed materials: _____
- IBC: Yes No
- Gusseted films: Yes No
- Die: Fixed Reversing Rotating
- Haul-off: Fixed Reversing Rotating
- Width of roll at haul-off: _____ mm
- Rotation time: Min. _____ min Max. _____ min
- Power supply: _____ VAC _____ Hz (single phase)
- Existing measuring and control units: Thickness gauge Profile control system
 Width measurement Width control
 Meter weight control Line speed control
- Brand of existing line: _____

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Product overview

K-300 Rotomat KT

Online thickness gauge with rotating scanner

KNC-400 Rotomat KT

Online thickness gauge for sticky
and sensitive films

KNC-600 Linear Scanner

Online thickness gauge for cast film

K-NDC Rotomat KT

Nuclear online thickness gauge
for barrier films

K-300 CF Gauge

Online thickness gauge
for quality supervision

S-50

Online thickness gauge
for quality supervision

S-100

Capacitive online thickness gauge
for barrier films

FE-8

Width measurement and control
for lines with or without IBC

FILMTEST

Offline measurement for quality control

PROFILSTAR.NET

Visualization for quality supervision and control

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