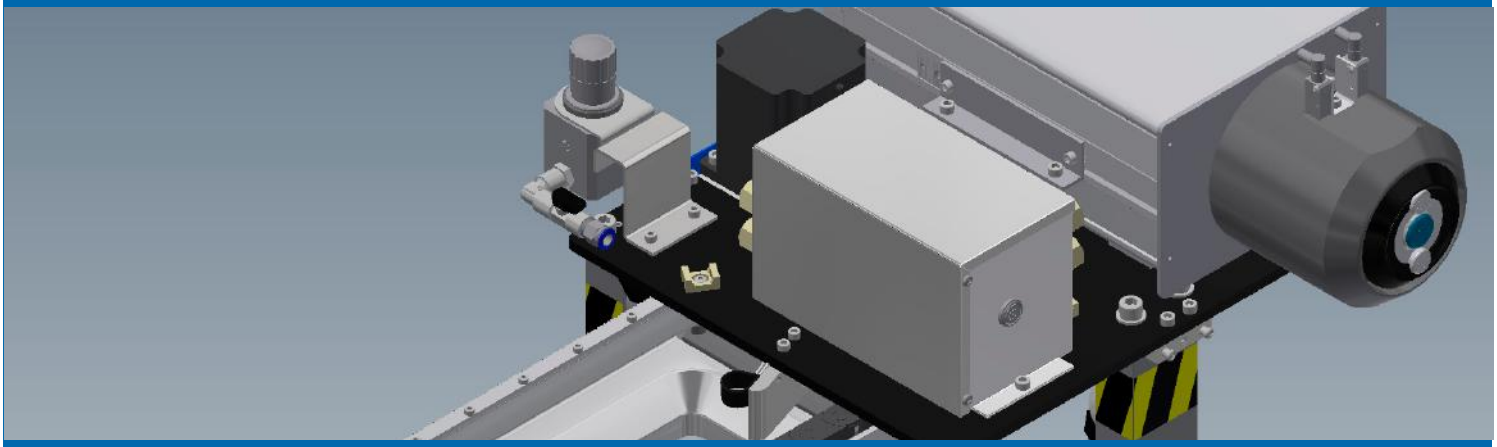
KÜNDIG CONTROL SYSTEMS
The Gauge Manufacturer for Film Extrusion SWISS MADE

KNC-600
Linear Scanner

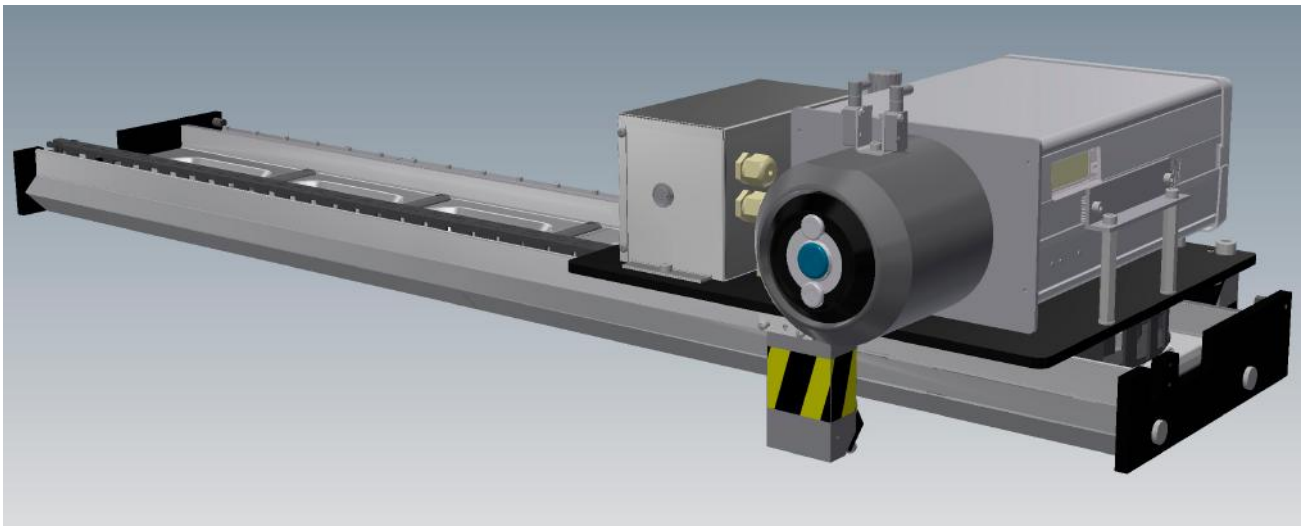


Online Thickness Gauge for cast film lines

KNC-600 Linear Scanner

The KNC-600 Linear Scanner is a thickness gauge for cast film lines, film orientation lines or other extrusion lines where the thickness of flat film needs to be measured.

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.

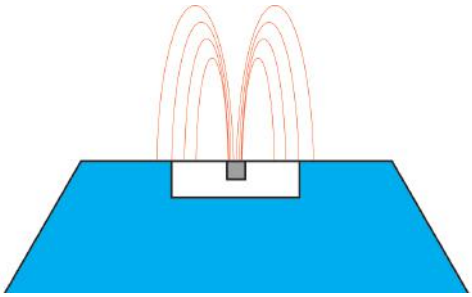


KNC-600 Linear Scanner

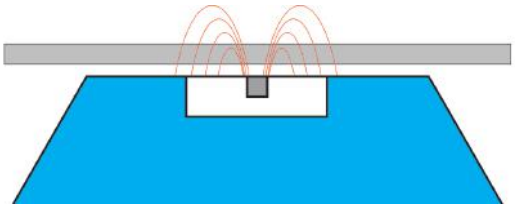
The installation of the KNC-600 can be easily done by factory technicians and immediately put into service. The measuring device is nearly maintenance free and provides a high reliability and performance.

The capacitive measuring principle

The capacitive sensor operates with an electric field, the so-called stray field of a capacitor. The field intensity variates depending on the thickness of the film. This variation is calculated and shown as thickness.



Sensor and stray field without film



Sensor and stray field with film

Capacitive thickness sensors are especially qualified for thickness measurement because of the following reasons:

- High resolution and accuracy
- Instant reproducibility of the measured profile
- No influence due to coloration or film transparency
- Not subject to licensing / No costly disposal

KNC-600 - Non contact thickness measurement

Advantages of a non-contact thickness measuring system:

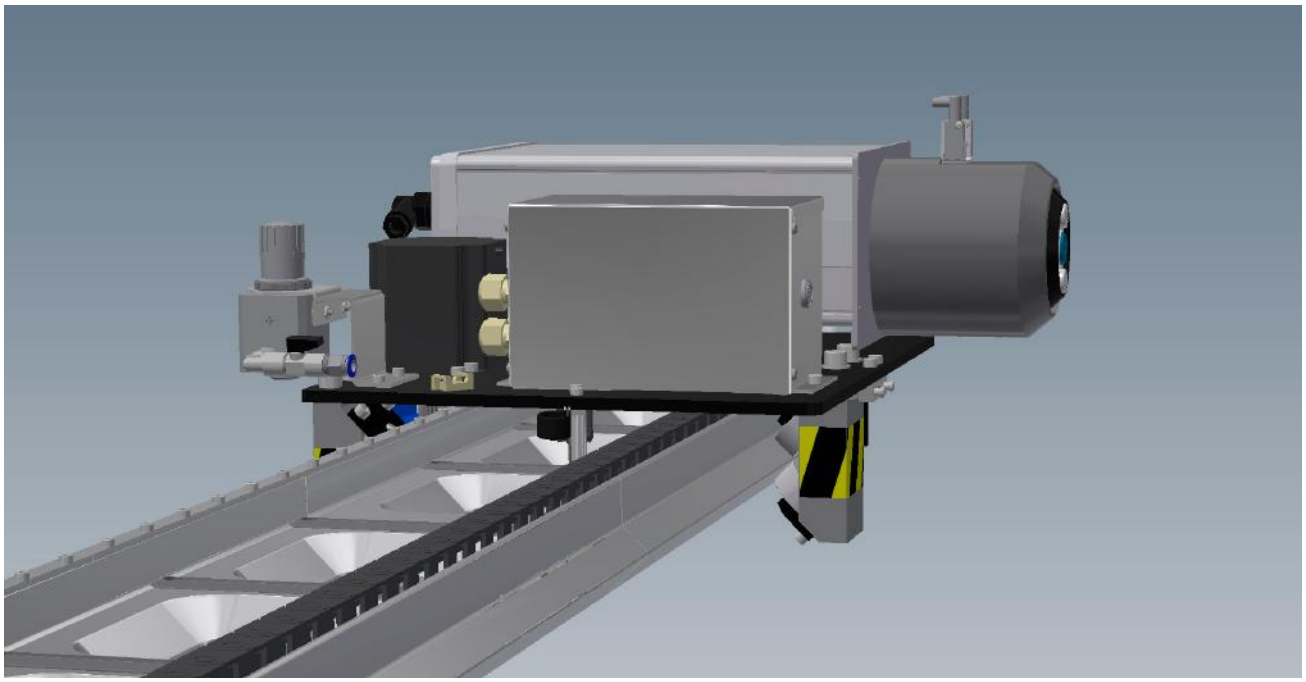
- Online measurement of sticky film
- Sensitive films can be measured scratch-free
- No tear and wear of the sensor
- No contamination of the sensor

Requirements for a reliable film measurement:

- The film must be vertical at the installation place of the sensor
- Movement of the film must be no more than 0.4 inches (10mm) at max. 5 Hz

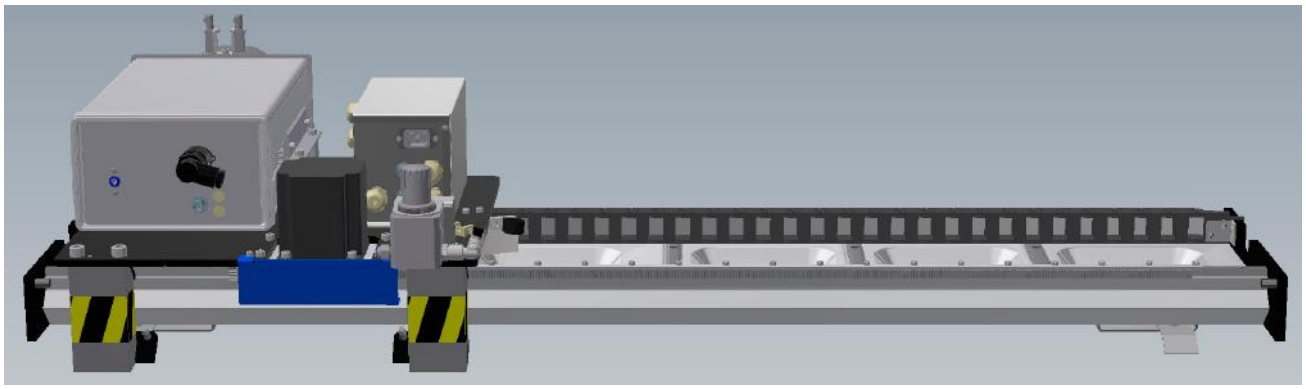
The procedure

Once the measurement is started, the traveller moves to the center of the film, before the thickness sensor extends. It continuously measures the thickness across the web. Two infrared sensors in the head ensures that the thickness gauge does not run over the edge.



Linear Scanner

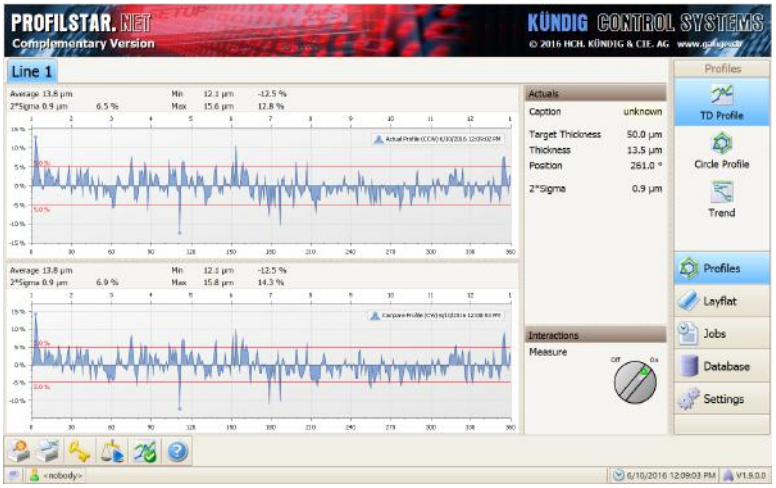
The scanner consists of modular segments, and is therefore available in almost any size.



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 online thickness gauges, can be connected to one PROFILSTAR.NET unit.



PCD-LINK via UDP/IP Ethernet

The proven PCD-LINK protocol via UDP/IP can also be used to communicate to the new VDP-Process. So it is still compatible with existing host computers but at the same time offers a new and very cost efficient version.

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) compatible to the VDP-Process.

PCD-Link via RS-422

A Data Processor box is available as an option, especially to maintain compatibility to control systems using an RS-422 port to communicate with the thickness gauge. The PCD-Link Protocol ensures that no software modifications at all are needed.

KÜNDIG CONTROL SYSTEMS
The Gauge Manufacturer for Film Extrusion SWISS MADE

Technical data KNC-600 Linear Scanner

Interface values	
Power supply	110 - 240 VAC, 50/60 Hz or 24VDC
Power consumption	max. 100 VA
Thickness measurement	
Measuring principle	Capacitive thickness measurement Suitable for all electrically non-conducting material
Measuring frequency	1 MHz
Measuring range	10 to 300 µm > 300 µm on request
Measuring interval	40 ms
Resolution	0.1 µm
Accuracy after calibration	10 to 30 µm ⇨ +/- 0.5µm > 30 µm ⇨ +/- 2%
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.

ROI calculation

Material output _____kg/h	X	Operation time _____h/Day	X	Operation days _____Days/Year	X	Material price _____€/kg	=	Material throughput _____€/Jahr			
				Material throughput _____€/Year	X	Optimisation _____%/100	=	Material savings _____€/Year			
				Investment _____€	:	Material savings _____€/Year	=	ROI _____Years			

gauge.ch

Questionnaire application technology

Company

Address

Zip Code **City** **Country**

Contact person **E-mail**

Phone **Fax**

We are interested in

- ❑ Online thickness gauge
- ❑ Online thickness gauge and automatic profile control
- ❑ Offline system for film thickness
- ❑ Width measurement
- ❑ Width measurement and control
- ❑ Meter weight control

Specifications of existing line

Film width:	Min. _____ mm	Max. _____ mm
Film thickness:	Min. _____ µm	Max. _____ µm
Throughput:	Min. _____ kg/h	Max. _____ kg/h
Line speed:	Min. _____ m/min	Max. _____ m/min
Extrusion:	❑ Monoextrusion __ Components	❑ Coextrusion __ Layers __ Components per layer
Processed materials:	_____	
Width of roll at haul-off:	_____ mm	
Power supply:	_____ VAC _____ Hz (single phase)	
Existing measuring and control units:	❑ Thickness gauge ❑ Width measurement ❑ Meter weight control	❑ Profile control system ❑ Width control ❑ Line speed control
Brand of existing line:	_____	

E-mail: kcs@kundig-hch.ch

Thickness Gauges for Blown Film Lines

K-500 Rotomat KT
Capacitive thickness gauge for a wide range of films

KCF-700 Rotomat KT
Non contact thickness gauge for sticky and sensitive films

K-NDC Rotomat KT
Nuclear thickness gauge for barrier films

S-100 Twin
Capacitive thickness gauge for barrier films

K-300 CF Gauge
Thickness gauge for quality supervision

S-50
Thickness gauge for quality supervision

Thickness Gauges for Cast Film and MDO Lines

KNC-600 Linear Scanner
Non contact thickness gauge for cast film and MDO lines

Width Measuring / Control System for Blown Film Lines

FE-8
Width measurement and control for lines with or without IBC

Quality Control

Profilstar.Net
Visualization for quality supervision and control

Filmtest 3G
Offline measurement for quality control

HCH. KÜNDIG & CIE. AG
Joweid Zentrum 11
CH-8630 Rüti ZH / Switzerland

Phone +41 (0) 55 250 3616

kcs@kundig-hch.ch
www.gauge.ch