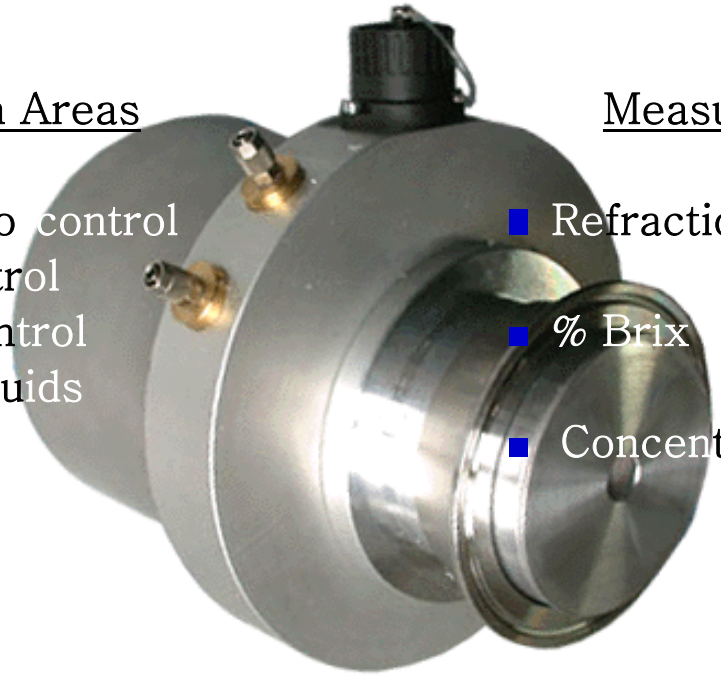
Our New Process Refractometer

PR 20-Series

for inline measurements of liquids

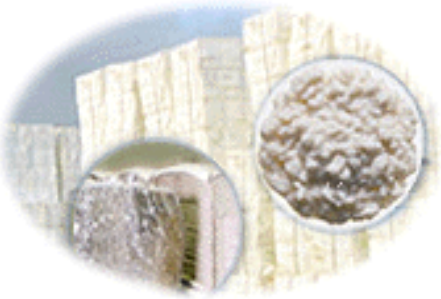


Application Areas

- Mixing-ratio control
- Quality control
- Quantity control
- Purity of liquids

Measurement units

- Refraction index nD
- % Brix
- Concentration



Pulp and Paper Industry

Chemical Industry

Beverage Industry

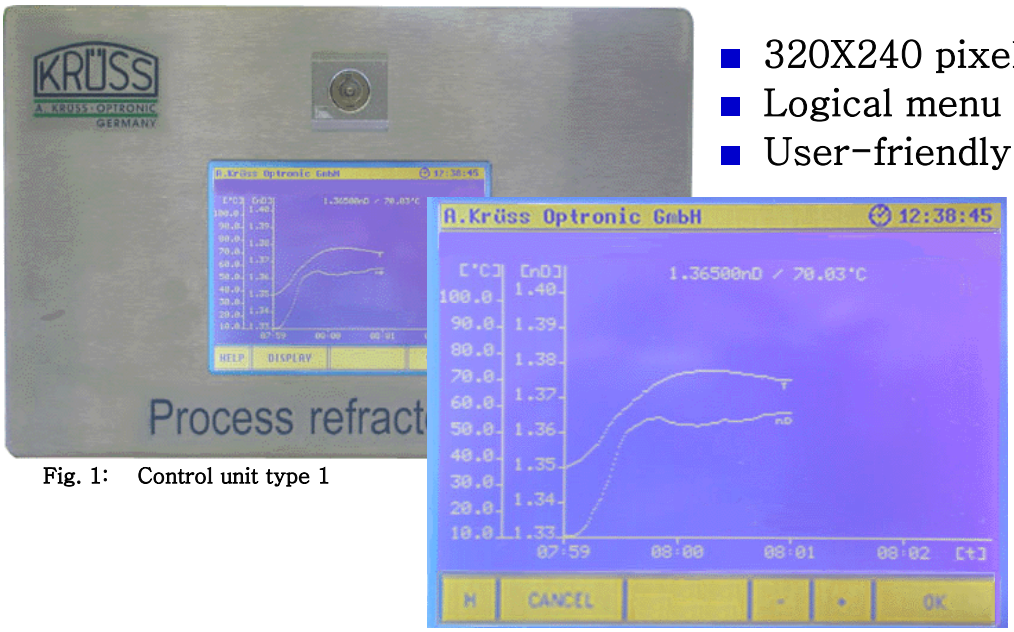
Food Industry

Sugar and Sweetener Industry

Total Control – 24 Hours a Day

Control unit

The **control unit type 1** (Fig.1) has a graphic display with touch-panel and is the interface between user and process refractometer. The user has a total overview of all the relevant data and information. The data is stored by the control unit.



- 320X240 pixel touch-screen
- Logical menu
- User-friendly

Fig. 1: Control unit type 1

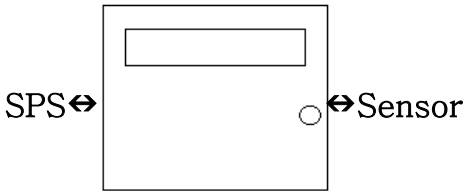


Fig. 2: Control unit type 2

Control unit type 2 (Fig. 2) enables the process refractometer to be connected directly to an SPS control system.

PC-Windows Software

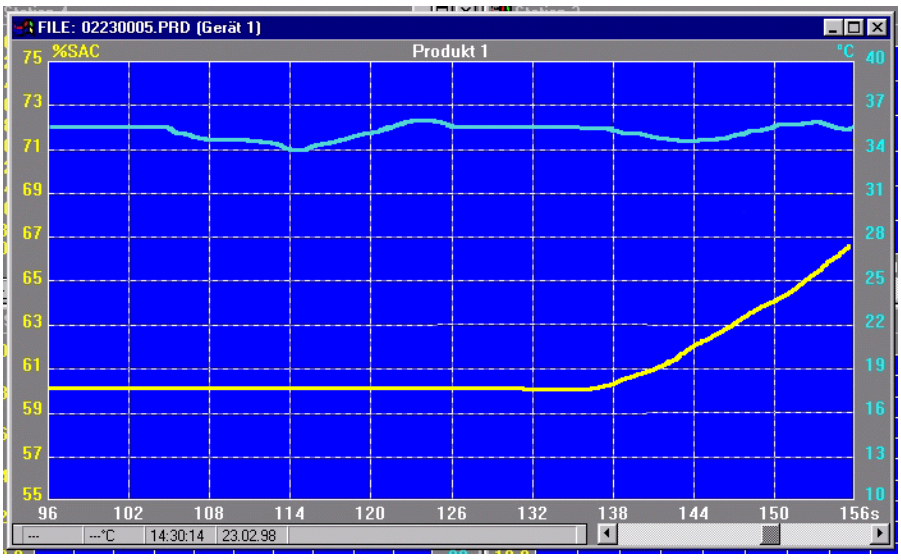


Fig. 3: PC-Windows software PR WIN

With PC Windows software PR WIN (Fig.3), all measurement data can be graphically displayed, stored and analyzed on a PC, an ideal solution in any production department. Up to 16 process refractometers can be connected to one computer.

PR 20-series

This process refractometer has been developed for direct insertion into pipes and boilers (Fig. 4) and is ideal for process control in the food , beverage, pulp and paper, sugar and sweetener, and chemical industries, as well for separation of products.

There is no need to install a bypass line. This simplifies installation in pipes or boilers.

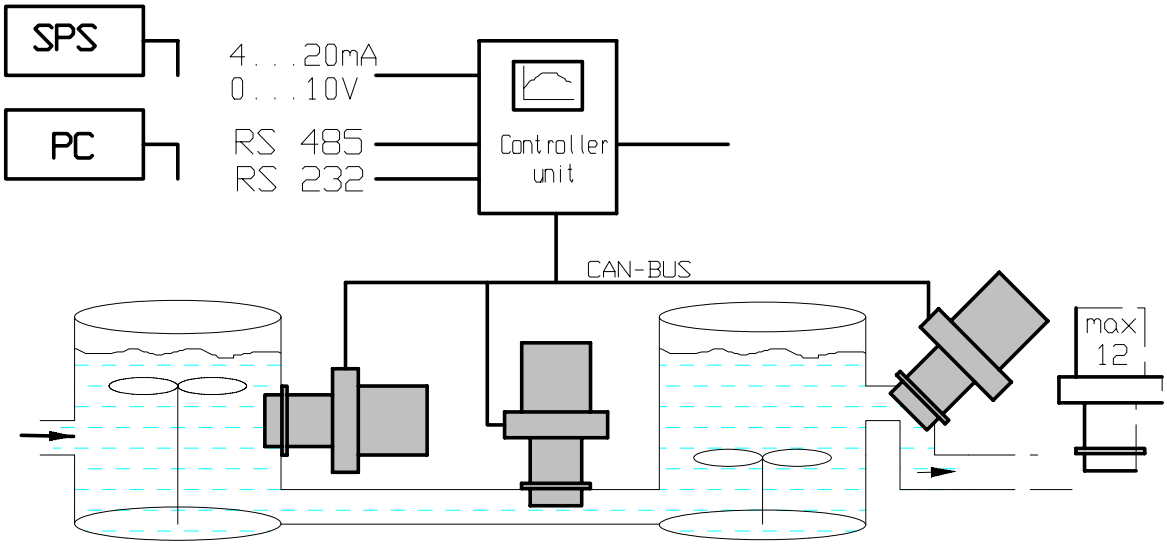


Fig. 4: Installation possibilities PR 20-series

Ex-Protection

The sensor is also in an ex-protection version available.

Installation

Installation of the process refractometer is simple and fast due to the use of standardized flanges (Fig.5).

Depending on the diameter of the pipe a T-piece or adapter has to be welded on.

Fig. 5: Installation equipments

Specifications

PR 20 S-Series Standard Precision		Refraction Index [nD]	Sugar Scale [% Brix]	Accuracy [nD] / Brix	Resolution [nD] / Brix	Linearity [nD] / Brix
	PR 20-S1	1.3200nD...1.4900nD	0%...80%	±0.0002	0.0001	0.0002
	PR 20-S2	1.3550nD...1.5317nD	15%...95%			
	PR 20-S3	1.3900nD...1.5500nD	35%...>95%			
	PR 20-S4	1.4500nD...1.6000nD	-	±0.2 %	0.1 %	0.2 %
	PR 20-S5	1.5000nD...1.6500nD	-			

PR 20 H-Series High Precision		Refraction Index [nD]	Sugar Scale [% Brix]	Accuracy [nD] / Brix	Resolution [nD] / Brix	Linearity [nD] / Brix
	PR 20-H1	1.32000nD..1.49000nD	0%...80%	±0.00002	0.00001	0.00002
	PR 20-H2	1.35500nD..1.53178nD	15%...95%			
	PR 20-H3	1.39000nD..1.55000nD	35%...>95%			
	PR 20-H4	1.45000nD..1.60000nD	-	±0.02 %	0.01 %	0.02 %
	PR 20-H5	1.50000nD..1.65000nD	-			

Specification	PR20S + PR 20H
Measurement mode	Refractive index Sugar concentration User defined
Measurement unit	Refractive index [nD] Sugar conc. [%Brix] User defined [%]
Measurement time	1 sec
Temperature measurement	-10...200.0°C
Temperature resolution	0.1°C
Temperature measurement accuracy	0.2°C
Temperature compensation	ICUMSA arbitrary
Temperature sensor	PT1000
Process temperature	-5...160°C
Ambient temperature	0...60°C
Prism	Saphir
Illumination	LED 590nm

Sensor	PR20S + PR 20H
Ex-protection	optional
Housing	Stainless steel
Interface	CAN - Bus
Protection class	IP65
Working voltage	24V

Control unit 1	
Housing	Stainless steel
Display	LCD 5.7" 320x240 Pixel, monochrome
Operation	Touch-screen
Interface	4-20mA / 0-20mA 0-10V RS232 / RS485 potential separation
Output	6 * relays
Interface Sensor	CAN – Bus
Cable length: control unit - sensor	max. 300m
Protection class	IP65
Working voltage	100V...250V~ , 50/60Hz

Control unit 2	
Interface	4-20mA / 0-20mA RS232 / RS485
Interface Sensor	CAN – Bus
Cable length: control unit - sensor	max. 300m
Protection class	IP65
Working voltage	100V...250V~ , 50/60Hz

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