

PR21 | Process Refractometer



The process refractometer was developed for direct installation in pipelines and boilers, and is ideal for process monitoring, control and separation of products in the chemical, beverage, food, pulp and paper as well as sugar industries.

As no bypass is necessary, it is much simpler to install the process refractometer in a pipeline or tank.

Standard connections enable the process refractometer to be assembled quickly and easily. Depending on diameter, a T-piece is inserted into the pipeline or an adapter welded on, as with the tank.

Fields of application:

Determination of mixing ratios, quality and quantity inspection in the following industries:

- Pulp and paper industries
- Beverage industry
- Food industry
- Sugar and sweetener industry
- Textiles industry
- Pharmaceutical industry
- Chemical industry
- Petrochemical industry
- Metalworking industry
- Wastewater management

Common Specifications

Measurement mode	Refractive index [nD], Sugar content [%Brix], User defined [%]
Measurement time	3–60 s
Temperature sensor	PT100
Temp. measurement	-10 – 200 °C
Temp. resolution	0.1 °C
Temp. measurement accuracy	0.2 °C
Temperature compensation	ICUMSA, arbitrary
Process temperature	-5 – 160 °C
Ambient temperature	0–60 °C
Prism	Sapphire
Illumination	LED 590 nm
Housing	Edelstahl
Interfaces	Analog 0/4–20 mA, Ethernet, PROFIBUS (optional)
Protection class	IP65
Explosion protection	optional
Power supply	24 V

Model overview

Model / Article-No.	Measurement accuracy	Resolution	Product Temperature	Ambient temperature
PR21S	0.0002 nD	0.0001 nD	< 60 °C	< 40 °C
PR21S-T	0.2 %Brix	0.1 %Brix	< 160 °C	< 60 °C
PR21H	0.00002 nD	0.00001 nD	< 60 °C	< 40 °C
PR21H-T	0.02 %Brix	0.01 %Brix	< 160 °C	< 60 °C

PRB21 | Bypass Process Refractometer



The bypass process refractometer PRB21 fills the gap between the DR6000 series of digital laboratory refractometers and the process refractometer PR21. The sample is directed through a bypass to the measurement chamber which is made of stainless steel, while the actual prism is made of sapphire and is thus particularly scratch-resistant. The PRB21 is usually connected to a PLC and is used for continuous process monitoring. The measurement interval is adjustable (>3 s) and the measurement result is not affected by either the colour or the turbidity of the sample. The PRB21 has various interfaces and can also be supplied with PROFIBUS on request.

A display is also available for visual monitoring. The internal temperature sensor allows automatic temperature compensation and the measured temperature to be sent to the PLC.

Specifications

Measurement range		1.3300 nD–1.5600 nD 0–95 %Brix
Accuracy	PRB-H	0.00002 nD; 0.02 %Brix
	PRB-S	0.0002 nD; 0.2 %Brix
Resolution	PRB-H	0.00001 nD; 0.01 %Brix
	PRB-S	0.0001 nD; 0.1 %Brix
Measurement units		Refractive Index [nD] Saccarose [%Brix] Invert Sugar [%Brix] Glucose [%Brix] Fructose [%Brix]
Measurement time		3–60 s
Temperature measurement		-10 – 99.9 °C
Temperature resolution		0.1 °C
Temperature accuracy		0.2 °C
Temperature compensation		ICUMSA
Temperature sensor		PT100
Prism		Sapphire
Illumination		LED 590 nm
Housing		Cast steel
Interfaces		RS-232, analog 0/4–20 mA
Protection class		IP65
Working voltage		24 V
Display		LCD 120x32 Pixel
Operation		Touchscreen
Output		1 Relay

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Features:

- Excellent value for money
- Wide measurement range from 1.3300–1.5600 nD / 0–95 %Brix
- Just 3 seconds measurement time
- Password-protected
- Prism in the sample chamber is easy to clean
- Stainless steel sample chamber is suitable for food samples
- User-friendly interfaces for direct connection to a PLC
- Minimal sample quantities required
- Very easy to install, no special requirements