

# PROCESS REFRACTOMETER | PR21-SERIES

Technical data, Version 3.1 December 2021



## Basic device data

DESIGNATION	KEY DATA
MEASURING RANGE	<ul style="list-style-type: none"> <li>PRB21S: nD 1.3200-1,5600 ; 0-95 %Brix</li> <li>PR21S: nD 1.3200-1.5200; 0-90 %Brix</li> <li>Due to its manufacture, the PR21S covers a measurement range of around nD 0.1100 in the measurement range. This measuring range is set during production.</li> </ul>
MEASUREMENT ACCURACY	<ul style="list-style-type: none"> <li>nD <math>\pm 0.0002</math>; <math>\pm 0.2</math> %Brix</li> </ul>
RESOLUTION	<ul style="list-style-type: none"> <li>nD 0.0001; 0.1 %Brix</li> </ul>
TEMPERATURE COMPENSATION	<ul style="list-style-type: none"> <li>Automatic temperature compensation for %Brix according to ICUMSA selectable</li> <li>Customer temperature compensation can be set up</li> </ul>
MOUNTING	<ul style="list-style-type: none"> <li>PRB21S: Bypass with flow-through cell</li> <li>PR21S: Inline</li> </ul>
MEASUREMENT PERIOD	<ul style="list-style-type: none"> <li>ca. 10 s</li> </ul>
MEASUREMENT PRISM	<ul style="list-style-type: none"> <li>Sapphire</li> </ul>
SAMPLE CONNECTIONS	<ul style="list-style-type: none"> <li>PRB21S: hose nipples with 10 mm outer diameter</li> <li>PRB21S: External thread hose nipples for screwing into flow-through-cell G1/8" (EN ISO 228-1)</li> <li>PR21S: DN80 Flange and flange clamp</li> </ul>
FILLING QUANTITY	<ul style="list-style-type: none"> <li>PRB21S: 3 ml (flow-through-cell + hose nipples)</li> </ul>
LIGHT SOURCE	<ul style="list-style-type: none"> <li>LED 589 nm</li> </ul>
PROCESS PRESSURE	<ul style="list-style-type: none"> <li>PRB21S: &lt; 2 bar (relative)</li> <li>PR21S: &lt; 9 bar (relative)</li> </ul>
CIP-ABLE	<ul style="list-style-type: none"> <li>YES until 120 °C</li> </ul>
INTERFACES	<ul style="list-style-type: none"> <li>RS232; RS232 for display, 2x analogue 0(4)-20 mA; relay input, 2x relay output</li> </ul>
IP CODE	<ul style="list-style-type: none"> <li>IP65 total (IP67 ports)</li> </ul>
DIMENSIONS (W X H X D)	<ul style="list-style-type: none"> <li>180 mm x 190 mm x 180 mm</li> </ul>
HOUSING	<ul style="list-style-type: none"> <li>Aluminum, powder coated</li> </ul>
WETTED COMPONENTS	<ul style="list-style-type: none"> <li>Sapphire, PTFE, FKM und Edelstahl 1.4305 (X8CrNiS18-9)</li> </ul>
DEVICE WEIGHT	<ul style="list-style-type: none"> <li>3 kg</li> </ul>

### Temperature data

DESIGNATION	KEY DATA
TEMPERATURE MEASUREMENT	With integrated temperature sensor Pt100
TEMPERATURE MEASUREMENT RANGE	-200-120 °C
TEMPERATURE MEASUREMENT ACCURACY	± 0.2 °C
TEMPERATURE MEASUREMENT RESOLUTION	0.1 °C
PROCESS TEMPERATURE	10-60 °C
AMBIENT TEMPERATURE	0-40 °C
AMBIENT HUMIDITY	10 - 90 % (non-condensing)

### Electrical data

DESIGNATION	KEY DATA
OPERATING VOLTAGE ( PROCESS REFRACTOMETER )	24 V <sub>DC</sub> (Min: +18 V <sub>DC</sub> ; Max: +30 V <sub>DC</sub> )
OPERATING VOLTAGE (DISPLAY)	24 V <sub>DC</sub> (Min: +18 V <sub>DC</sub> ; Max: +30 V <sub>DC</sub> )
POWER CONSUMPTION	5 W ohne Display; 6 W mit Display
CURRENT INTERFACE (APPARENT OHMIC RESISTANCE)	Min: 0 Ω; Max: 750 Ω
CURRENT INTERFACE ISOLATION VOLTAGE GALVANIC SEPARATION	Max: 60 V
CURRENT INTERFACE TOLERANCE RANGE	±0.02 mA (Max: ±0.05 mA)
CURRENT INTERFACE DAC RESOLUTION	16 Bit (± 0.305 μA)
SWITCH OUTPUTS SWITCHING VOLTAGE	Max: 125 V <sub>AC</sub> ; 60 V <sub>DC</sub>
SWITCH OUTPUTS SWITCHING CURRENT	Max: 0.3 A @ 125 V <sub>AC</sub> ; 1.0 A @ 60 V <sub>DC</sub>
SWITCH INPUT VOLTAGE	24 V <sub>DC</sub> (Max: 36 V <sub>DC</sub> )
SWITCH INPUT CURRENT @ 24 VDC	Max: 5 mA
SWITCH INPUT SWITCH-ON- THRESHOLD	18 V <sub>DC</sub>
SWITCH INPUT SWITCH-OFF THRESHOLD	6 V <sub>DC</sub>
SWITCH INPUT INTERNAL RESISTANCE	5520 Ω