

# Detection Section

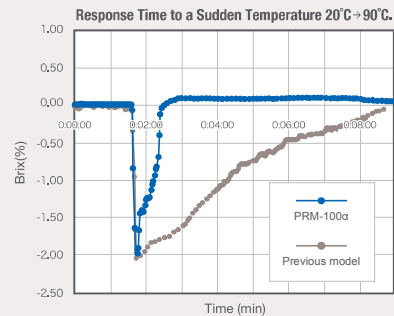
PRM-100α

Mounts into a piping system and measures the refractive index of the liquid inside. The refractive index and temperature data signals are sent via RS-485 to the display section.

**NEW** A significantly improved thermo-sensor quickly adapts to sudden temperature changes, keeping measurements stable.

**More Resistant to Temperature Change!**

Brix measurements stabilize more than twice as quickly as the previous model when temperature rapidly rises or drops (see image below).



The air-cooling fin transfers heat away, with no need for external coolants.

Capable of withstanding temperatures from -5°C to 160°C.

The prism surface has undergone processing to make it completely and entirely flat, preventing the build-up of solids and ensuring long-term, reliable measurements.

**NEW** The Kalrez® O-ring is highly resistant to heat and solvents.

# Calculation Display Section

PRM-100α

Signals received from the detection section, such as Brix and concentration values are converted, undergo arithmetic processing (e.g. automatic temperature compensation), and are digitally displayed on the seven-segment LED display section. It is also equipped with outputs for recorder and computer use, and a high- and low- limiter output.

**NEW** Improved accuracy: Brix ±0.05%, nD ±0.00010.

**NEW** Wider-than-ever 0.0 to 100.0% Brix range.

**NEW** Options to display minimum readouts to the smallest decimal place. Brix: 0.1% or 0.01%, nD: 0.0001 or 0.00001.

**NEW** Easy-to-See Display Panel. The LED display offers improved visibility from a distance over a conventional LCD. Measurement values are displayed in orange, and temperature in blue.

Calculation display section with built-in power supply.

Optional alarm output for when the reading goes outside the user's set range.

Use the optional DC4-20mA output to communicate with a PLC and control production automatically!



The cable to the detection section can conveniently be extended to 200m for remote access (Length: 15m standard).

## PC-Programmable User Scale (Conc).\*

Programming a user scale is no longer a hassle! Simply create a refractive index data table, using known concentrations in a .txt file, and send it to the refractometer via RS-232C on any PC Win95 or newer.

**Programmable concentration setting**

File	Edit	Search	Help				
*T	5	5.0	10.0	20.0	30.0	40.0	0.0
*N	2	0.00	10.00	20.00	30.00	40.00	50.00
*C	1	1,33390	1,36050	1,38500	1,40840	1,42970	1,43590
*C	2	1,33389	1,36010	1,38440	1,40570	1,42280	1,43480
*C	3	1,33299	1,35910	1,38310	1,40410	1,42090	1,43260
*C	4	1,33194	1,35780	1,38160	1,40240	1,41900	1,43050
*C	5	1,33061	1,35640	1,38010	1,40070	1,41710	1,42840
*C	6	0.0	0.0	0.0	0.0	0.0	0.0

\*Direct concentration is displayed without the need to convert from refractive index or Brix.

# PRM-100α



## Stay a Step Ahead of Danger with In-line Process Refractometer.

This premium model features lab-grade accuracy across the full range of refractive index, Brix, or user-defined concentration scale. Data can be transmitted to a PLC for system automation. This model can be installed in the pipe lines of refill tanks, cleaning solution tanks, dilution, mixing, and blending tanks of manufacturing plants that produce liquid products such as the food and medicine industries, as well as those used in all kinds of industrial applications. This makes the unit capable of continuously monitoring items such as the refractive index, Brix, concentration and moisture, and mixture ratio of a variety of liquids. It has been enhanced with a wider than ever Brix measurement range of 0.00 to 100.00% and an accuracy of  $\pm 0.05\%$ .

Specifications		In-line Refractometer PRM-100α
Cat.No.		3574
Measurement items		Refractive index (nD), Brix (temperature compensation according to sucrose), concentration (Conc) (User scale), and temperature (C)
Measurement range		Refractive index (nD): 1.32000 to 1.55700, Brix: 0.00 to 100.00%, Temperature: -5.0 to 160.0°C
Resolution		⊙ Refractive index (nD): 0.0001 Brix: 0.1% ⊙ Refractive index (nD): 0.00001 Brix: 0.01% (factory default setting) * by selection ⊙ Temperature: 0.1°C
Measurement accuracy		Refractive index (nD): $\pm 0.00010$ Brix: $\pm 0.05\%$ * When measuring standard solutions (sucrose) under stable temperature conditions. Temperature: $\pm 0.1^\circ\text{C}$
Temperature compensation range		5 to 100°C
Display system		Seven-segment LED
Output method		Recorder output (DC4-20mA), RS-232C output, and alarm output when high- and low-limit values are exceeded.
Power supply		AC100 to 240V, 50/60 Hz
Cable		Detection section - Calculation display section (power supply 12V and RS-485) (Length: standard 15m (maximum up to 200m))
Materials in contact with the solution		Prism: Sapphire, Prism stage: SUS316L
Pressure resistance		0.98MPa (detection section)
Ambient temperature		5 to 40°C
Power consumption		30VA
International protection class		IP67 Water resistant
Dimensions and weight		Detection section: 10.8×26.32×10.8cm, 3.2kg Calculation display section: 19.2×10×24cm, 3.3kg

### User scale

User scale (concentration) can be programmed with a PC.

File	Edit	Search	Help	
*T	5	5.0	10.0	20.0
*N	2	0.00	10.00	20.00
*C	1	1.33390	1.36050	1.38500
*C	2	1.33369	1.36010	1.38440
*C	3	1.33299	1.35910	1.38310
*C	4	1.33194	1.35780	1.38160

### Alarm function

Equipped with an alarm output function that transmits a signal when pre-set high- and low-limit measurement values are exceeded.

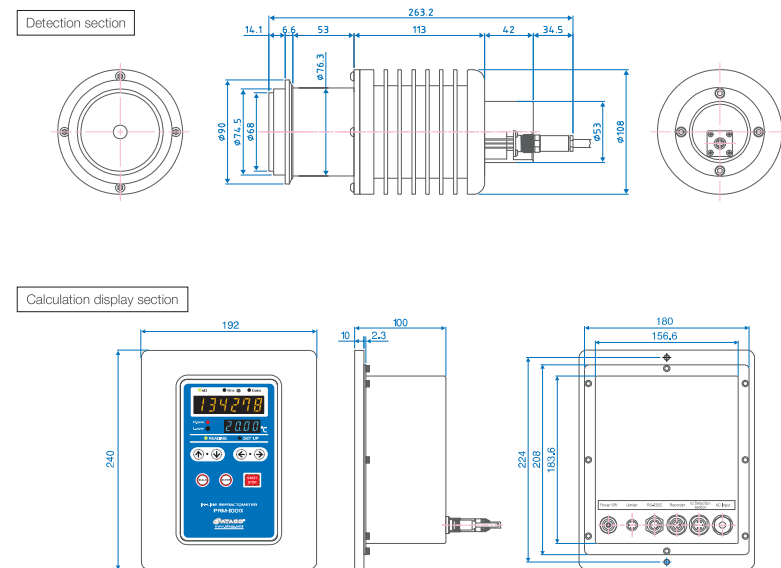


### Improved thermo-sensor performance.

The thermo-sensor quickly adapts to sudden temperature changes, making stable measurement possible.



### Dimensions (unit of length: mm)



\*For details on the detection section and calculation display section, please refer to pg. B14-B15.