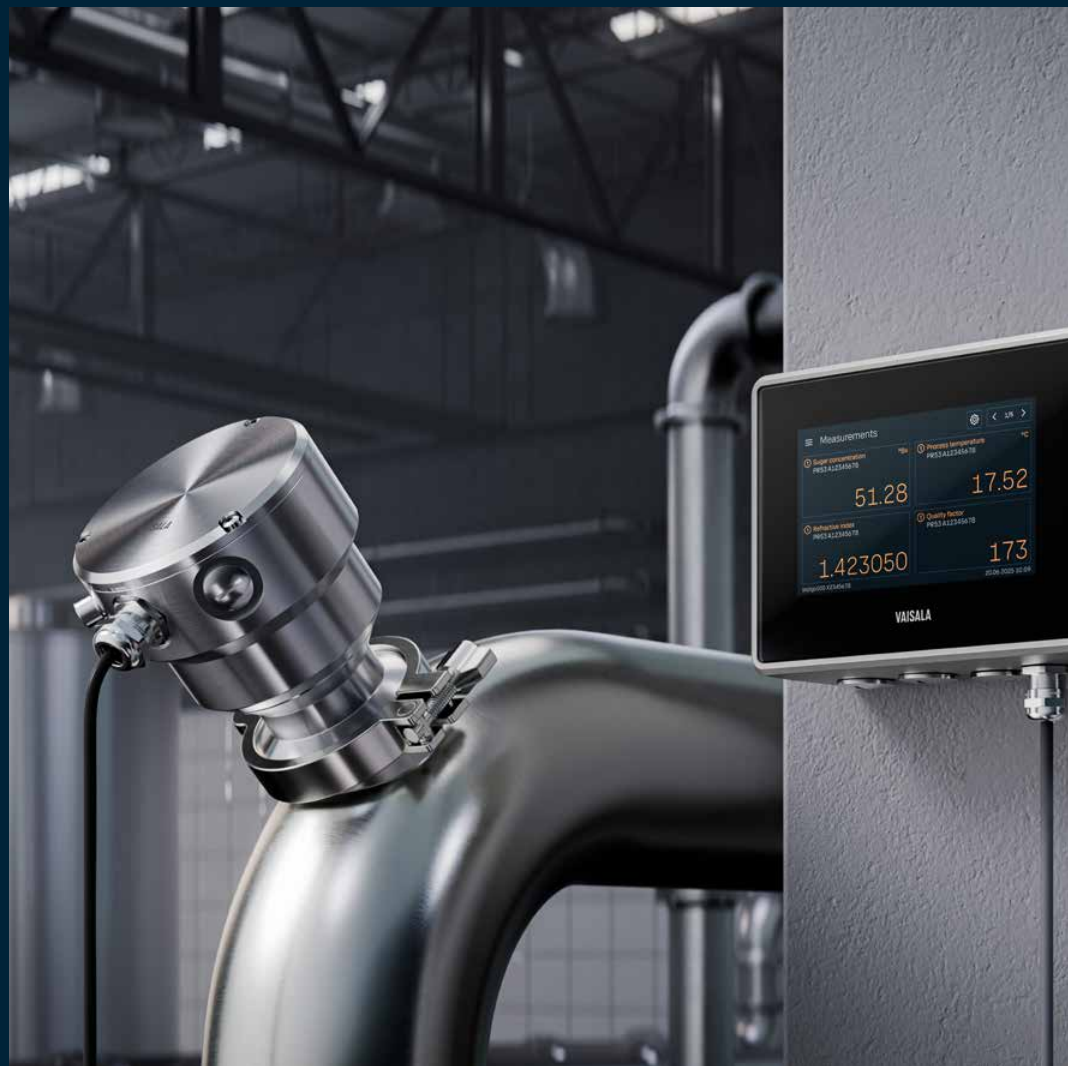


**VAISALA**

# Liquid concentration measurements

The Vaisala Polaris™ process refractometer product family offer precise, real-time liquid concentration measurements. They optimize manufacturing processes, enhance productivity, and save resources, energy and time across multiple industries and hundreds of applications. With over 25,000 installations worldwide, Vaisala Polaris™ refractometers build on four decades of proven optical expertise.





### Smarter processes start here

Does your process have liquids?  
Do you need to measure  
liquid concentrations?

Vaisala's proprietary digital imaging technology and pioneering optical design set a new standard for inline concentration measurement – delivering true, drift-free readings. With over four decades of optical expertise, our instruments provide confidence even in the most demanding industrial conditions.

# Industry applications

Polaris refractometers ensure precise and stable measurements that drive productivity, quality, and safety across industries.

## Chemical



## Food and beverage



## Oil refining and petrochemical



## Pharmaceutical and biotechnology



## Pulp and paper



## Semiconductor



## Sugar



## Sweeteners



## Wastewater

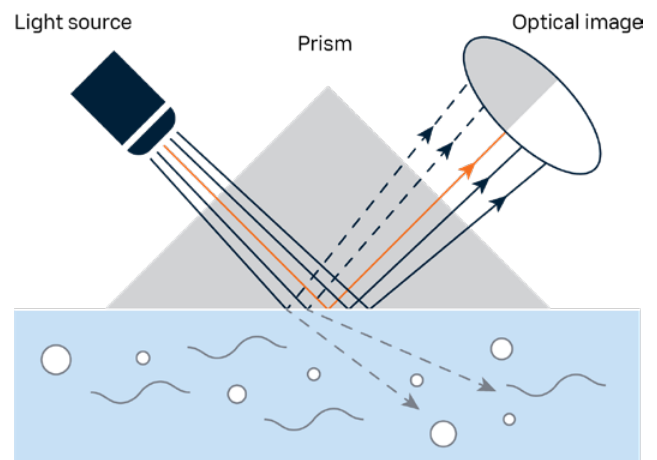


# The Vaisala Polaris™ PR53 series of process refractometers

Polaris refractometers represent the latest, 5th-generation product line. Our significant research and development investments have earned us global recognition for delivering innovative, dependable, top-quality instruments.

## The all-digital difference

Polaris refractometers use a digital, physics-based principle that measures how light reflects at the interface between a prism and the process liquid to determine the critical angle. A CCD camera identifies this angle to determine the liquid's refractive index, while a built-in temperature sensor compensates for process temperature variations. This drift-free method delivers reliable concentration measurements in units such as Brix, density, %wt, or other preferred units.



## Key technical features

### Reliable measurement

- Accurate, drift-free concentration measurement with long-term stability
- Unaffected by bubbles, particles, suspended solids or color

### Seamless integration

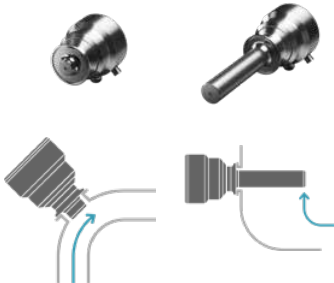
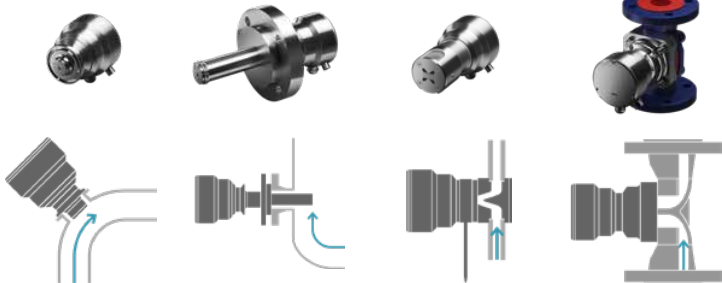

- Standard 4–20 mA output with HART and Modbus RTU; additional interfaces available through the optional Indigo520 transmitter
- EX models available for use in hazardous areas

### Flexible installation

- Simple installation for pipelines and tanks, with models suited to different process needs
- Suitable for demanding conditions, including high temperature, high pressure, and aggressive chemicals

### Low maintenance & easy service

- Factory pre-calibrated for long-term, maintenance-free operation without re-calibration.
- Optional wash systems for sticky liquids
- Supported by user-friendly configuration and service tools

Hygienic processes		Harsh and general industries				Pulp and paper industry
PR53AC Sanitary Compact	PR53AP Sanitary Probe	PR53GC Compact	PR53GP Probe	PR53M PTFE-body	PR53W Valve Body	PR53SD SAFE-DRIVE
 <ul style="list-style-type: none"> <li>• Ideal for hygienic environments such as food &amp; beverage, dairy, and pharma processes</li> <li>• Brix and other concentrations</li> </ul>		 <ul style="list-style-type: none"> <li>• Suitable for a wide range of industrial and chemical applications, providing durability and reliable measurement even in harsh process conditions</li> <li>• Measurement of sugars, acids, alkaline solutions, alcohols, hydrocarbons, solvents, suitable for aggressive chemicals</li> </ul>				 <p>Designed for critical and safety measurements in pulp mills</p>

### Vaisala Polaris™ platform with Indigo connectivity

The Vaisala Polaris™ platform brings together our latest inline concentration measurement technology, advanced diagnostics, and scalable performance for industrial liquid process control. The PR53 family is part of this platform and offers consistent user experience, accessories, and lifecycle support across models and applications.

Polaris refractometers can operate as standalone devices or connect to selected Vaisala Indigo ecosystem components. When used with the Indigo520L transmitter – designed specifically for refractometers – users gain access to advanced diagnostics, data logging, wash control, and local display and interfacing capabilities.



For service, configuration, data logging, and diagnostics, Polaris instruments are also compatible with the Vaisala Indigo80 handheld and Insight PC software.



### Services for Vaisala process refractometers

We provide global service and proactive lifecycle support to keep your Vaisala Polaris™ refractometers performing at their best. From functional testing and maintenance to fixed-price Care agreements and comprehensive training, our services help you ensure reliable operation and minimize unexpected downtime.



**Vaisala** – a global measurement technology leader with decades of R&D and innovation behind every instrument.

