

Flexim P10X[®] R721

Process Analytics by
Inline Refractometry

Accurate | Reliable | Unique Measuring Principle



FLEXIM

EMERSON

Flexim PIOX® R721

Process Analytics by Inline Refractometry

Unique measuring principle

Employing our patented transmitted light principle, light is transmitted through the medium rather than surface reflected. As a result, the instrument measures the refractive index of the medium, unaffected by any fouling film on the prism.

Versatile transmitter

The transmitter is able to handle complex measurement tasks and provides analog or digital (serial bus-systems) data outputs for process control and monitoring. By adding input(s), other process variables can be accommodated, by which the device can handle 3 component media; as an example a PIOX® S (velocity of sound) can be combined.

Application Versatility

Concentration / Density Measurement

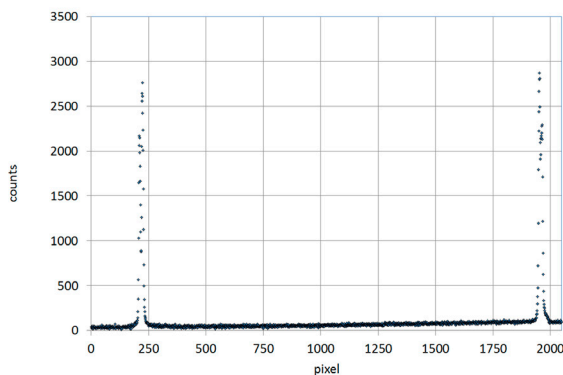
Unique Measuring Principle

Accurate / Drift-free

Performance Indication

No Minimum Flow Requirement

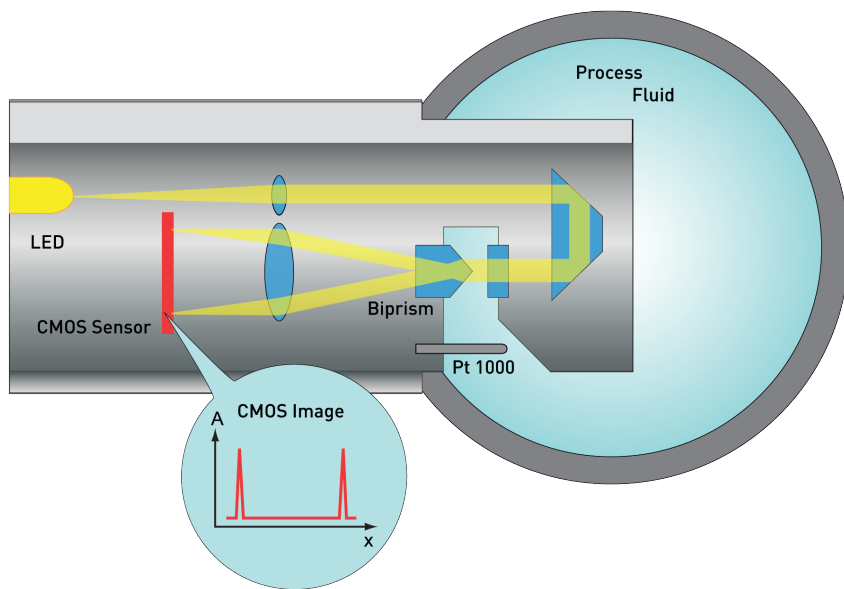
Accurate



Widely applicable

The sensor head is usually ordered in SS316L stainless steel with Kalrez sealing. However, a PTFE version is available in combination with different hazardous area ratings, attending to nearly all chemical resistance requirements. The transmitter is double-sealed for highest security. A sanitary design sensor is available. To complete the application, a variety of process connections and flow chambers are available.



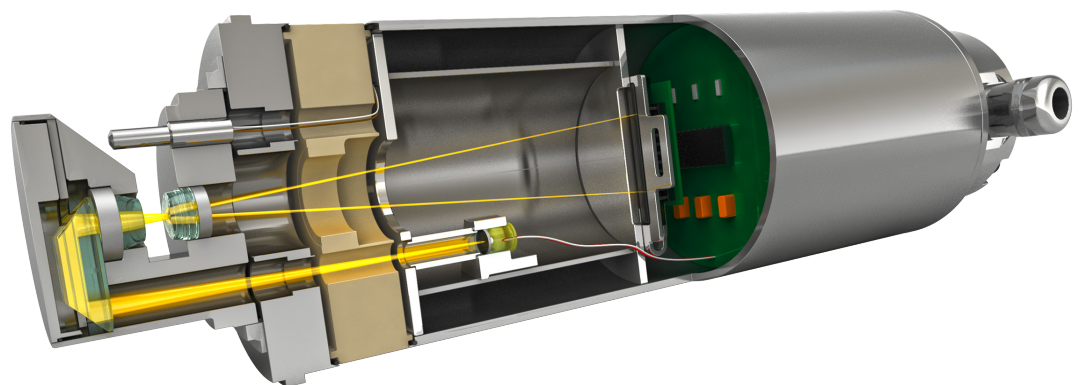


Accurate

With a reproducibility of the refractive index $\pm nD 0.00002$, very accurate concentration measurements can be derived. Emerson provides a huge media database and, in the case of unique customer media, Emerson's laboratory will create the liquid file that can be added to the transmitter.

Drift-free measurement

The double prism employed negates the effect of fouling film or other contamination, producing virtually drift-free measurement.



Fouling / turbidity measurement / diagnostic values

The newest generation of CMOS image converters is applied to convert the raw measurement data to practical values; which results in useful diagnostic values as well. The height, the shape and difference of the 2 peaks provides information about noise, fouling and turbidity and gives you useful information about the health of the measurement.

TECHNICAL FACTS

PIOX® R	Process Refractometer Measurement according to Flexim's patented Transmitted Light Principle
Quantities of Measurement	Refractive index and refractive index at standard temperature, fluid temperature, concentration g/l, mass and vol %, density and density at standard temperature, scale values for example °Brix and °API, additional quantities programmable
Measurement Range	nD: 1.3 ... 1.7, °Brix: 0 ...100
Measurement Uncertainty	nD: 0.0002 (corresponds to: 0.1 °Brix, 0.1 w%)
Repeatability	nD: 0.00002 (corresponds to: 0.01 °Brix, 0.01 w%)
Operating Temperature (Fluid)	- 5 °F ... (+ 270°F) + 300 °F
Fluid Pressure	150 psi; on request 300 psi (depending on process connections)
Degree of Protection / Explosion Protection Optional	Sensor: IP67, FM Class I Div. 2 Transmitter R721(stainless steel housing): IP65, FM Class I Div. 2 Transmitter R721(aluminium housing): IP65
Chemical Design Variant Wetted Parts, Materials Housing Material	Stainless steel 316Ti (1.4571) Stainless steel 304 (1.4301)
PTFE Chemical Design Variant Wetted Parts, Materials Housing Material	PTFE carbon-fiber reinforced bulk material powder coated stainless steel 304 (1.4301)
Process Connection	DIN/ANSI flange, proprietary Flexim flow cell
Hygienic Design Variant Wetted Parts, Materials Housing Material	Stainless steel 316L (1.4404) Stainless steel 304 (1.4301)
Process Connection	Compatible to Varivent or Tri-clamp connection

The Emerson logo is a trademark and service mark of Emerson Electric Co. Brand logotype are registered trademarks of one of the Emerson family of companies. All other marks are the property of their respective owners.
© 2024 Emerson Electric Co.

All rights reserved.

For more information, visit

[Emerson.com/Flexim](https://www.emerson.com/Flexim)

BUPIOXR3-1US 0224

FLEXIM

