

Product Information IRM-11

FOOD

Refractive Index Meter IRM-11

Application / Specified Usage

- Measurement of dissolved solids in liquid media via refractive index scales such as BRIX or Plato

Application Examples

- Sugar concentration measurement for quality monitoring in beverage manufacture
- Measurement of alcohol content in brewing, distilling, and wine making
- Brix based blending control for juice manufacture

Hygienic Design / Process Connection

- Open, freely flushing design cleans easily and provides fast reaction to product changes
- CIP-/SIP-cleaning up to 140°C (284°F) / maximum 60 minutes
- Product contacting materials compliant to FDA
- Sensor made of stainless steel
- Optics made of high resistant sapphire
- 3-A compliant 2" Tri-Clamp process connection

Features / Advantages

- IP69K all stainless steel construction
- +/-0.10° BRIX (+/-0.12%) accuracy
- Compact sensor design does not require a wall or panel mounted analyzer
- Simple to use calibration and configuration software
- Easy to see status light shows sensor state
- Analog output 4...20 mA freely adjustable
- Custom scales available for measurements other than BRIX, Plato, and Refractive Index

Options / Accessories

- Electrical connection with M12 plug-in connector
- Preassembled molded cordset with M12 connector
- Calibration and configuration software available for download

Measuring Principle of the Refractive Index Meter

An LED light source directs light into the process media. The density of the liquid will directly impact the speed of light changing the index of refraction. A receiver array which senses the index of refraction communicates a temperature compensated value in the scale of the customer's choosing. The units are communicated in BRIX, Plato, refractive index, or other units depending on scale selection.

Authorizations



IRM-11



IRM-11



Specification		
Measurement category	Can be configured at the factory	BRIX, Plato, Refractive Index, others on request
Measurement range	Factory selected	1.3330-1.5000 Refractive Index (nD) 0-85 BRIX
Process connection		2" TC
Process pressure		-1...20 bar (-14.5 psi...290 psi)
Materials	Connecting head Sensor Lens Plastic cover/sight glass	Stainless steel 304 Stainless steel (316L) Sapphire Polycarbonate
Temperature ranges	Ambient Process CIP/SIP	-10...60 °C (14...140 °F) -20...100 C (-4...212 F) compensated range Up to 140 °C (284 °F) max. 60 min
Repeatability	BRIX nD	+/-0.1° 0.0001
Accuracy	BRIX nD	+/-0.1° +/-0.0002
Response time		3 s
Communication	Zero adjustment	via USB and PC interface
Electrical connection	Cable gland Cable connection Supply voltage Protection class	M16 x 1.5 M12 connector 5...24 V DC max. 190mA IP69K
Output	1 analog output	4...20 mA (scaled to measurement range)
Weight		480 g (1 lbs)

Mechanical Connection / Installation



- The sensor has to be installed in such a way that the sapphire lens is immersed in media and no bubbles can occur. Installation in a rising pipe is recommended.

Conditions for a measuring point according to 3-A Sanitary Standard 46-03



- The Sensor IRM-11 is conforming to the 3-A Sanitary Standard.
- Sensors are designed for CIP-/SIP cleaning. Maximum 140 °C (284 °F) / 60 min.
- The mounting position and self-draining properties must be in accordance with the current 3-A Sanitary Standard.

Transport / Storage



- No outdoor storage
- Dry and dust free
- Not exposed to corrosive media
- Protected against solar radiation
- Avoiding mechanical shock and vibration
- Storage temperature -20...+60 °C (-4...140 °F)
- Relative humidity max. 80 %

Notice on conformity



- Applicable directives:
- Electromagnetic Compatibility Directive 2014/30/EC
 - The CE label confirms compliance of this product with the applicable EC directives.
 - You have to guarantee the compliance of all guidelines applicable for the entire equipment.

IRM-11



Order code

IRM 11 Refractive index meter

Fitting

TC2 Tri-Clamp 2"

Surface finish

- 1 R_a Mechanical (3A)
- 2 R_a Electropolish (BPE)

Scale

- BR BRIX
- RN Refractive Index
- PL Plato
- XX Other (consult factory)

Electrical connection

- M M12 connector
- P Cable gland
- N 1/2 NPT

Cap

- 1 Opaque plastic
- 2 Stainless steel

IRM 11 TC2 1 BR M 1