

URX1

INTRINSICALLY SAFE DIGITAL ON-LINE REFRACTOMETER

The intrinsically safe model URX1 digital refractometer is a self-contained analyzer with multiple functions which can be mounted directly on the process line in a hazardous area.

In order to receive power and to handle mA and serial transmissions, the unit should be connected to specific barriers that meet ATEX certification requirements:

CE 0722 $\text{\textcircled{Ex}}$ II 1G EEx ia IIB T4

(°T. to 45°C) – CESI 03 ATEX 0320 X

The analyzer is able to continuously detect the refractive index of the liquid sample. The measured value can be viewed on the display in units of nD, or converted and expressed as a measurement of concentration (e.g. Brix).

The URX1's unique state-of-the-art design incorporates many modern refinements such as:

- Abrasion resistant sapphire prism
- Long life LED source
- High resolution CCD digital optical transducer

The instrument's membrane faceplate contains a liquid crystal digital display and input keypad.

The instrument also has an RS485 serial output for optional remote display or computer interface for remote configuration.

Optional PROFIBUS DP interface also available.

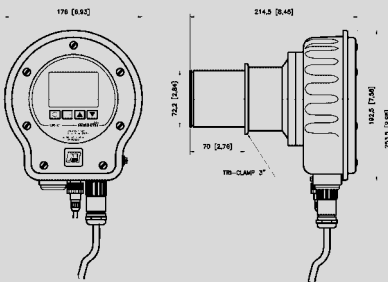
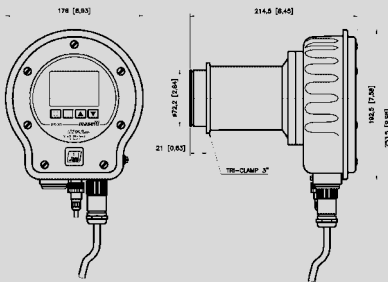
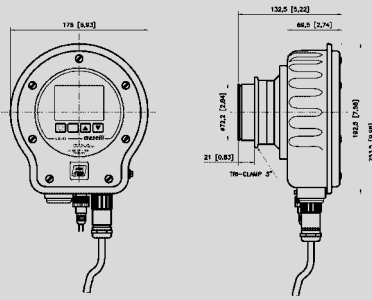
The URX1 refractometer can be installed outdoors, above ground level, and is rated for Category 1; Zone 0; Group II, B gas; Temperature Class T4.



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PROCESS ANALYZERS

TECHNICAL SPECIFICATIONS

Overall dimensions



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PROCESS ANALYZERS

UR-X1
Measurements Limits:
1.3330 – 1.5318 nD

Scale Amplitude:
Min.: 0.0227 nD
Max.: 0.1988 nD

Accuracy:
+/- 0.3% of the scale amplitude
Max. Accuracy: +/- 0.00007 nD

Resolution:
0.00001 nD

GENERAL FEATURES

Measurement Ranges:
Brix or Index of Refraction (nD)
1 User Range, upon request,
To be defined by specific tables

Temperature Compensation:
Automatic over the range -5 to +100°C (23 to 212°F)
Up to 140°C (284°F) upon request

Output Signal:
- Analog (optional)
4-20 mA (max. load 470 Ohm)
with 3-wire galvanic separation
barrier
mod. GM D1010D or equivalent
- Digital (optional)

RS485

RS485 signal from the URX1 (in the hazardous area) is directly converted for the user (in the safe zone) to RS232 or RS422/485 by the barrier.

A module for the PROFIBUS DP interface, per EN5017, can also be connected to the barrier itself.

Powered with galvanic separation barrier mod. GM D1043Q or equivalent

Signals using galvanic separation barrier mod. GM D1061S or equivalent

Power Supply:
Using two 24 V galvanic separation barriers connected in parallel mod. GM D1043Q or equivalent

Accessories:
In line mounting fitting with weld ends, for various tubing sizes. Other connection types upon request: flange, Tri-Clamp, DIN11851, etc.
Adapter flange for tank side wall mounting

CONSTRUCTION CHARACTERISTICS

Prism Material:
- Synthetic sapphire or optical glass

Light Source:
- High efficiency LED (Light Emitting Diode)

Measurement Element:
- CCD (Charge-Coupled Device)

Temperature Measurement:
- External 1000 Ohm RTD sensor,
- Internal sensor upon request

Input Keypad:
- Polyester membrane keypad

Display:
- Local Graphic LCD 128x64

Construction:
- Stainless steel and peek
- IP65 protection
- ATEX II 1 G – EEx ia IIB T4

Materials in contact with the process fluid:

- Synthetic sapphire
 - AISI 316 stainless steel
 - Viton
- (other materials upon request)

Fluid Operating Limits:

Temperature:
- from -5 to 100°C (23 to 212°F)
+140°C (23 to 284°F) on request

Pressure:
- from -1 to 10 bar at 20°C
- from -1 to 8 bar at 100°C
- up to 25 bar upon request

