



IOTRON™ SENSORS

INTEGRATED INDUSTRIAL ION SELECTIVE SENSOR SPECIFICATIONS

Sensor Part Number & Short Description:

AB 6430 – Sodium (Na⁺) Industrial Ion Selective (ISE) Inline, Immersion & Submersible Sensor; ¾" MNPT for Inline & 1" MNPT for Immersion/Submersible Use

Configuration Type:

Interface with ¾" FNPT threads of tee or process tank for Inline Use or 1" FNPT threads on insertion tube for immersion or waterproofing seal for submersible installations

General Sensor Specifications:

Operating Temperature Range:

+5 to +40 °C Continuous (Maximum +50°C with Ultralow Option)

Operating Pressure Range:

1 to 10 psig (6.9 to 69 kPa) with ASTI Sanitary / 1.25" MNPT Sensor Holder
1 to 10 psig (6.9 to 69 kPa) with ASTI HOT-TAP Valve Retractable Assembly

Sensor Body Material:

RADEL® R-5000 NT (Poly-Phenyl-Sulfone, PPSU)

Junction Support Matrix Material:

High-Density Polyethylene (HDPE) Standard for Standard & Ultralow Measurements
KYNAR® (Poly-Vinylidene-Fluoride, PVDF) Optional for Aggressive Service Conditions

External Dimensions:

See Drawing 6-ISE

ISE Measurement Specifications:

Linear Measurement Range:

2.3 to 23,000 ppm (1X10⁻⁴ to 1.0 Molar)

Lowest Limit of Detection:

0.23 ppm (1X10⁻⁵ Molar, a.k.a. 230 ppb)

Given in Ratios of Permissible Excess:
Interfering Ion / Measured Ion (in Molarity)

K⁺ (100), NH₄⁺ (1,000), Li⁺ (1,000), Mg²⁺ (5,000), Ca²⁺ (5,000)

Suitable pH range:

4.0 to 8.0 continuous (pH down to 2.0 and up to 10.0 for Intermittent Use Only) *

pH Considerations

* Note: The suitable measurement range will vary based upon the typical pH value of the sample to be measured as well as the extent of change in the pH during the timespan of the measurement. Please inquire to factory for specific feasibility review of your planned field measurement and process media.

ISE Sensing Element Dimensions:

0.315" (8mm) DIA active sensing region, 0.472" (12 mm) DIA overall sensing electrode

Initial Impedance:

< 100 MΩ @ 25 °C Standard Version, < 300 MΩ @ 25 °C with Ultralow Option

Reference System Specifications:

Type:

Double Junction Standard (Triple Junction Optional, Alpha Prefix "TJ")

Reference Half Cell:

Ag/AgCl, Saturated KCl

Primary Junction:

Porous Ceramic, Sat. KCl in crosslinked polymer, Interfaced to Secondary Junction

Secondary Junction:

Solid-State Non-Porous Cross-Linked Polymer embedded in HDPE/KYNAR Support Matrix holds excess KCl assuring saturation at all temps for stability & long sensor life

Supported Order Options with Alpha Prefix Order Code Designation:

Dissolved gas resistant ("A"), 3-Wire TC ("M"), ACCU-TEMP Fast TC ("X"), Two each Protective Tines ("GRO"), No Protective Tines ("NG"), Shielded Preamp Cable ("BL")

Inquire to factory for specials

Example Recommended Applications:

Industrial, municipal and food facilities that desire to monitor the sodium ion activity of the process samples as well as environmental monitoring in rivers, lakes and ponds for public health and water quality.

Storage and Shelf Life:

One (1) year from date of dispatch from factory when stored at indoor ambient room temperature with proper orientation & protector cap.

Available Configurations & Options:

Integrated Components:

- Pt1000 Temperature Compensation Element
- Analog Conventional Pre-amplifier (Optional for noisy areas and/or long cable runs)

Analog Sensors without integral preamplifier:

Terminated with Tinned Lead Wires (-TL)

Analog Sensors with integral preamplifier:

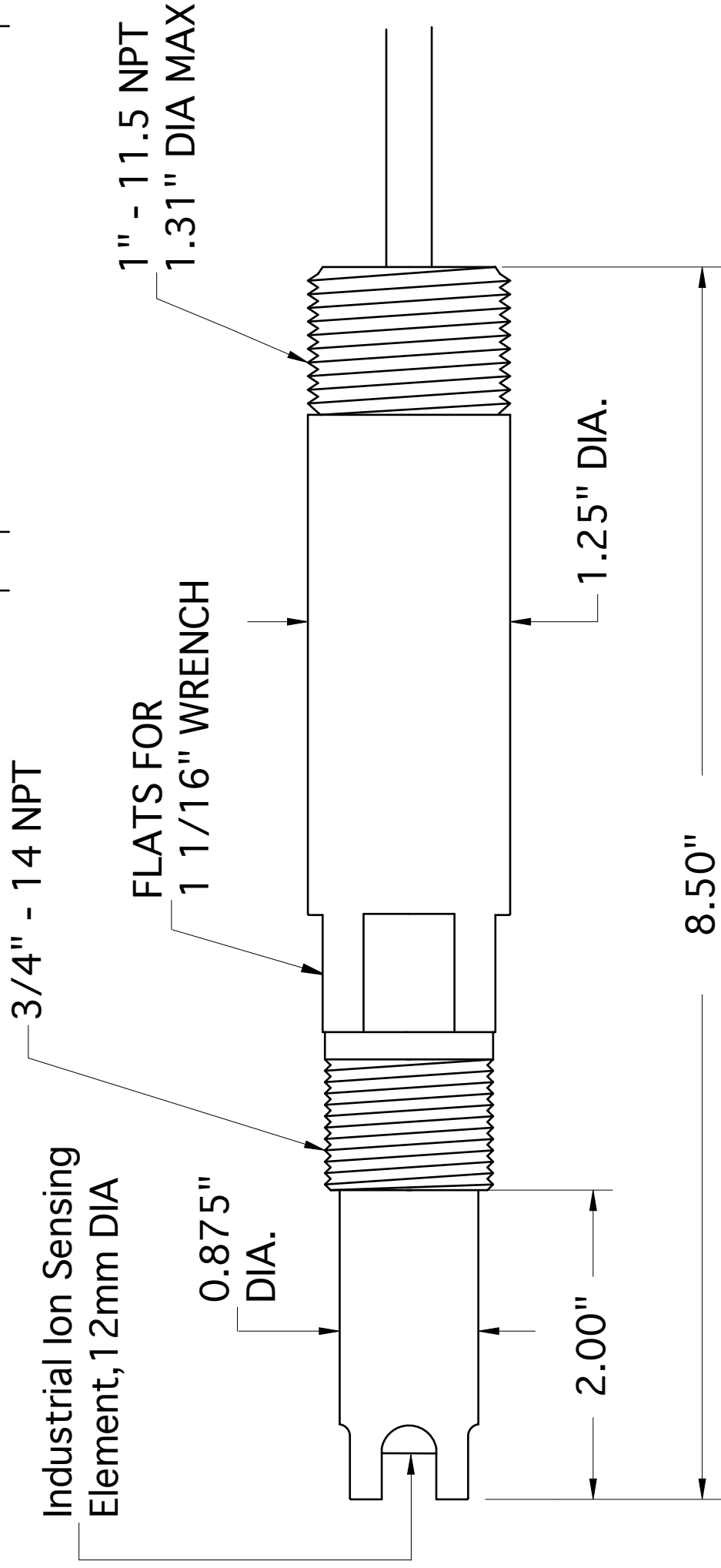
Terminated with Tinned Lead Wires (-TL) or Quick Disconnect NEMA 6P Snap (-Q7M)

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REVISION HISTORY		
REV	DESCRIPTION	DATE



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A

NOTES

- All dimensions are in inches, unless otherwise indicated with tolerances as detailed below
- Sensor body material of construction is RADEL for all 6XX0 series ion selective (ISE) models
- Drawing shown in the standard with protective tines configuration (4 places, 90 degrees apart).
The 2 protective tines only "GRO" configuration (2 places, 180 degrees apart) is optional.
- In the alternate without tines configuration ("NG") the sensor body is exactly 8.0 inches in length.
The max displacement for Ion Sensing Element is 0.2" yielding a max insertion depth of 1.7 inches past threads & overall max length of 8.2 inches.
- Do not use any sensor beyond the factory defined maximum temperature or pressure rating.

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TITLE		3/4"-1" MNPT Inline / Immersion / Submersible	
SIZE	PROJECT	DRAWING NO.	REV
B	IMMERSION	6-ISE Ion Selective Sensor	/
SCALE: Not to Scale		MODEL: 6XX0	SHEET: 1 OF 1

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