



# IOTRON™ SENSORS

## INTEGRATED INDUSTRIAL ION SELECTIVE SENSOR SPECIFICATIONS

<u>Sensor Part Number &amp; Short Description:</u>	<b>AB 6440 – Calcium (Ca<sup>2+</sup>)</b> Industrial Ion Selective (ISE) Inline, Immersion & Submersible Sensor; ¾" MNPT for Inline & 1" MNPT for Immersion/Submersible Use
<u>Configuration Type:</u>	<i>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</i>
<u>General Sensor Specifications:</u>	
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
<u>ISE Measurement Specifications:</u>	
Linear Measurement Range:	0.200 to 40,000 ppm (5X10 <sup>-6</sup> to 1.0 Molar)
Lowest Limit of Detection	0.020 ppm (5X10 <sup>-7</sup> Molar, a.k.a. 20ppb)
Given in Ratios of Permissible Excess: Interfering Ion / Measured Ion (in Molarity)	Na <sup>+</sup> (2,000), Mg <sup>2+</sup> (5X10 <sup>3</sup> ), K <sup>+</sup> (167)
Suitable pH range:	2.5 to 11 *
<i>pH Considerations</i>	* Note: The calcium ion selective sensor can only measured ionized calcium. Calcium bound in complexes or sparingly soluble forms cannot be detected. The equilibrium that defines the extent of total calcium present is in the measurable free ionized form may be both pH and temperature dependent. Contact factory for assistance with calibration.
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
<u>Reference System Specifications:</u>	
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
<u>Supported Order Options with Alpha Prefix Order Code Designation:</u>	Ammonia 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")
<b><i>Inquire to factory for specials</i></b>	
<u>Example Recommended Applications:</u>	Industrial, municipal and food facilities that desire to monitor the total hardness by means of using the ionized calcium ion as an indirect realtime proxy. Environmental monitoring in rivers, lakes and ponds for public health and water quality. Low-level calcium detection for water softener applications and high-level calcium measurement for product quality monitoring and to proactively stop scaling on process piping.
<u>Storage and Shelf Life:</u>	One (1) year from date of dispatch from factory when stored at indoor ambient room temperature with proper orientation & protector cap.
<u>Available Configurations &amp; Options:</u>	
Integrated Components:	- Pt1000 Temperature Compensation Element - Analog Conventional Preamplifier (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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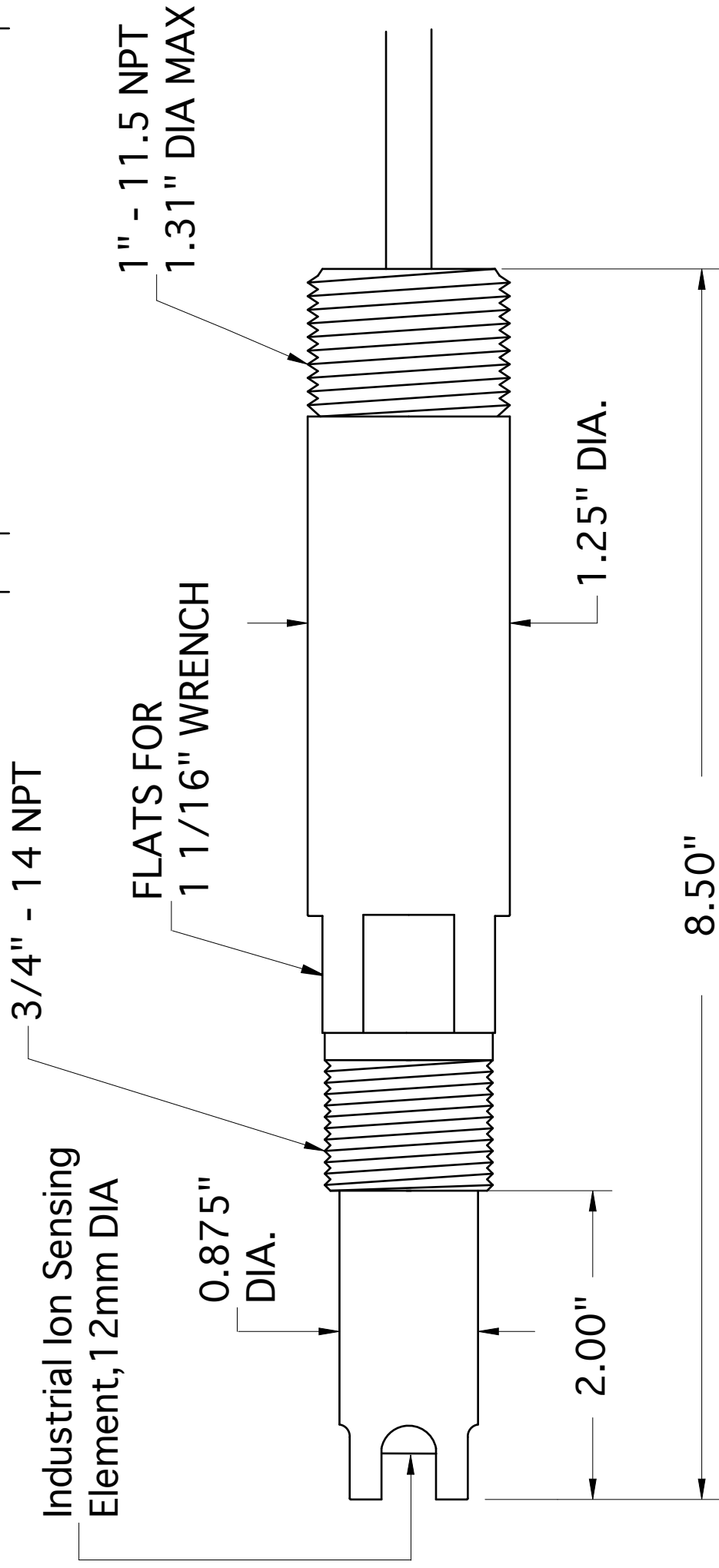
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REVISION HISTORY		
REV	DESCRIPTION	DATE

DESCRIPTION

DATE

APPROVED



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**NOTES**

1. All dimensions are in inches, unless otherwise indicated with tolerances as detailed below
2. Sensor body material of construction is RADEL for all 6XX0 series ion selective (ISE) models
3. 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.
4. 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.
5. Do not use any sensor beyond the factory defined maximum temperature or pressure rating.

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Advanced Sensor Technologies U.S.A.  
Website: <http://www.astisensor.com>

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

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