



IOTRON™ SENSORS

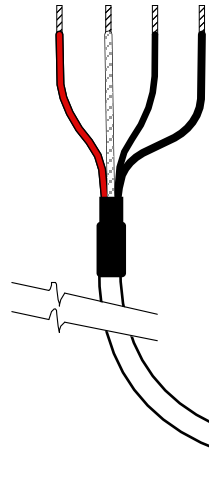
INTEGRATED INDUSTRIAL ION SELECTIVE SENSOR SPECIFICATIONS

<u>Sensor Part Number & Short Description:</u>	AB 5440 – Calcium (Ca²⁺) Industrial Ion Selective (ISE) for sanitary & valve retractable use with Double O-Ring seals & 3/4" MNPT for securing into sensor holder
<u>Configuration Type:</u>	<i>For use with ASTI Supplied 1.5", 2.0", 2.5" Sanitary or 1.25" NPT Threaded Sensor Holder or ASTI Supplied Valve Retractable (HOT-TAP) Sensor Holder Only</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
O-Rings Material of Construction:	Viton®-75 is standard, 2 each redundant O-rings are used to ensure seal integrity
External Dimensions:	See Drawing 5-ISE
<u>ISE Measurement Specifications:</u>	
Linear Measurement Range:	0.200 to 40,000 ppm (5X10 ⁻⁶ to 1.0 Molar)
Lowest Limit of Detection	0.020 ppm (5X10 ⁻⁷ Molar, a.k.a. 20ppb)
Given in Ratios of Permissible Excess: Interfering Ion / Measured Ion (in Molarity)	Na ⁺ (2,000), Mg ²⁺ (5X10 ³), K ⁺ (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-Response TC ("X"), 4 each Tines ("GR"), 2 each Tines ("GRO"), Shielded/Reinforced Preamp Cable ("BL")
<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 & 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)

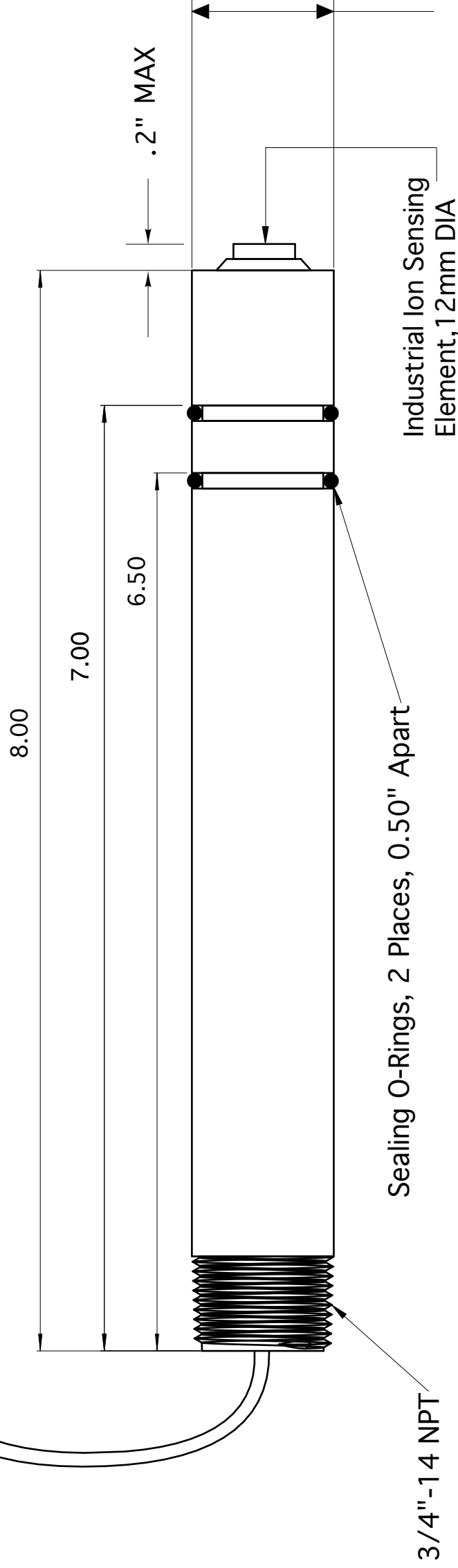
1

2

3



For end of cable terminations and wiring detail please see spec sheet



1:050 Ø

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 5XX0 series ion selective (ISE) models
3. O-ring material of construction is Viton-75 standard; CV75, Simriz 485 & Kalrez 4079 Optional
4. Drawing shown without protective tines. The maximum displacement of the sensor past the end of the body in this configuration is 0.2" inches yielding a max overall length of 8.2 inches.
5. With Protective tines "GR" (4 places, 90 degrees apart) or "GRO" (2 places, 180 degrees apart) configurations overall sensor length is 8.00 inches.
6. This sensor is only for use with ASTI supplied sanitary and valve retractable sensor holders.
7. See installation procedures for proper insertion of this sensor into the mating holder.

B

B

REVISION HISTORY		
REV	DESCRIPTION	DATE

APPROVED



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

DRAWN BY RH		CHECKED BY TADP		APPROVED BY MJP	
TOLERANCES		Angular: ± 0.25°			
1 Place: ± .1	3 Places: ± .005				
2 Places: ± .01	4 Places: ± .0005				

TITLE
Sensor for Sanitary & HOT-TAP/Retractable Use

SIZE B	PROJECT SAN / VR	DRAWING NO. 5-ISE Ion Selective Sensor	REV /
------------------	----------------------------	--	-----------------

SCALE Not to Scale	MODEL 5XX0	SHEET 1	OF 1
-----------------------	---------------	------------	---------

1

2

3