



IOTRON™ SENSORS

INTEGRATED INDUSTRIAL ION SELECTIVE SENSOR SPECIFICATIONS

<u>Sensor Part Number & Short Description:</u>	AB 8410 – Ammonium (NH₄⁺) Industrial Ion Selective (ISE) Twist Lock Sensor for Inline Quick Disconnect (Double O-rings) & 1” MNPT for immersion/submersible use
<u>Configuration Type:</u>	<i>Interface with Twist Lock Quick Disconnect Receptacle for Inline Use or 1” MNPT rear threads with insertion tube for immersion or waterproofing seal for submersible installs</i>
<u>General Sensor Specifications:</u>	
Operating Temperature Range:	+5 to +40 °C for Standard Version or Maximum +50 °C with “Ultralow” Option or Maximum +60 °C with “SH” Option
Operating Pressure Range:	1 to 10 psig (6.9 to 69 kPa) with 1”MNPT KYNAR® (PVDF) Twist Lock Receptacle
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 8-ISE
<u>ISE Measurement Specifications:</u>	
Linear Measurement Range:	0.090 to 18,000 ppm (5X10 ⁻⁶ to 1.0 Molar)
Lowest Limit of Detection	0.004 ppm (5X10 ⁻⁷ Molar)
Given in Ratios of Permissible Excess: Interfering Ion / Measured Ion (in Molarity)	Na ⁺ (5X10 ³), H ⁺ (1X10 ⁵), K ⁺ (5) Standard or (20) for “Ultralow” or (60) for “SH” option
Suitable pH range:	2.5 to 11 *
<i>Cases where pH Compensation is necessary to compute total ammonia species</i>	* Note: When pH is above 8.0 to 9.0 (depending upon process temperature) then the sum of the measured unbound ammonium ions and dissolved ammonia gas form must be computed as a function of both realtime continuous pH & temperature parameters.
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 Std, < 300 MΩ @ 25 °C for “Ultralow”, < 500 MΩ @ 25 °C for “SH”
<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>	Municipal potable water and water treatment facilities for chloramination monitoring. Municipal wastewater treatment for aeration basin monitoring & control of nitrification and denitrification process (usually together with dissolved oxygen measurement). Industrial facilities required to monitor and/or treat ammonia prior to discharge for compliance and environmental remediation. Environmental monitoring in rivers, lakes and ponds for public health and safety. Any free or total ammonia measurement that needs to operate with minimal cleaning & recalibration frequency (i.e. remote sites).
<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 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

APPROVED

Industrial Ion Sensing Element, 12mm DIA

O-RINGS (2 EACH)

LOCKING PINS FOR TWIST-LOCK QUICK-DISCONNECT FEATURE

1" - 11.5 NPT
1.31" DIA MAX

0.95" DIA.

1.69"

0.2" MAX

1.25"

8.00"

A

A

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 8XX0 series ion selective (ISE) models
3. O-ring material of construction is Viton-75 standard; CV75, Simriz 485 & Kalrez 4079 Optional
4. Drawing as shown is 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 suitable for inline installation when used with ASTI 1" MNPT Twist Lock Receptacle.
7. 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		Sensor for Inline Twist Lock Quick Disconnect Use	
SIZE	PROJECT	DRAWING NO.	REV
B	TWIST-LOCK	8-ISE Ion Selective Sensor	/
SCALE	Not to Scale	MODEL	SHEET 1 OF 1
		8XX0	1

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