

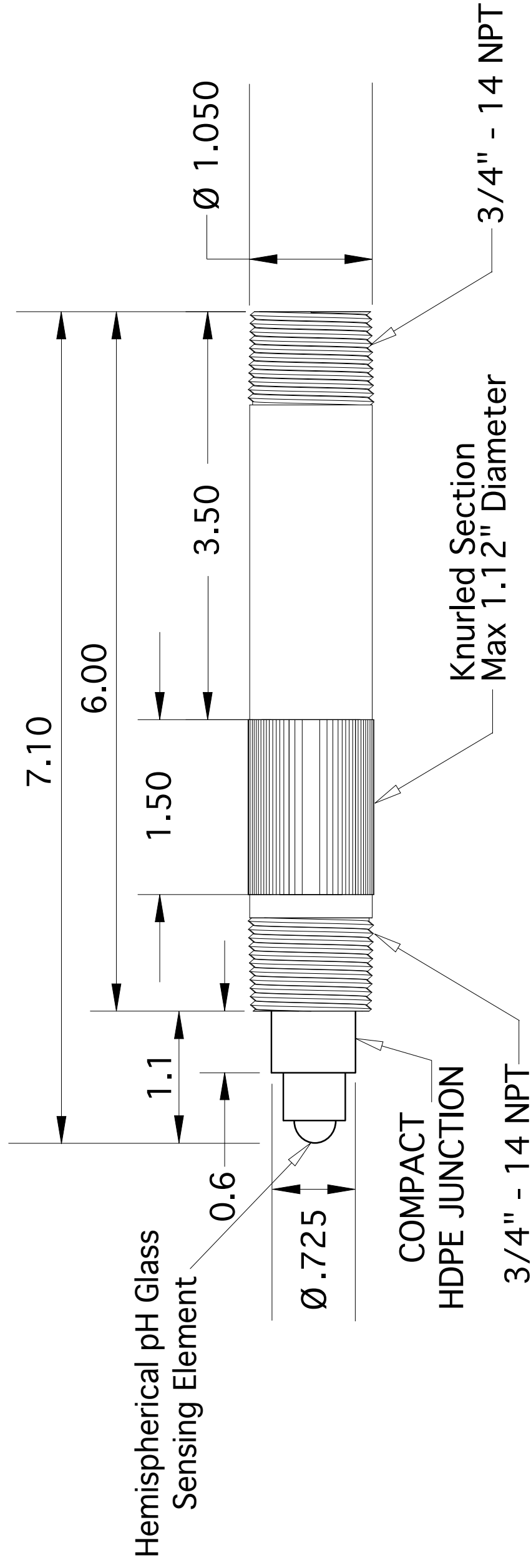


# IOTRON™ SENSORS

## INTEGRATED INDUSTRIAL pH SENSOR SPECIFICATIONS

<u>Sensor Part Number &amp; Short Description:</u>	<b>2412</b> – Acid Fluoride & HF Resistant Inline pH Sensor ( <b>Without Protective Tines</b> ) 1/2" or 3/4" MNPT on Front for Inline Use; 3/4" MNPT on Rear for sealing cable w/ conduit
<u>Configuration Type:</u>	<i>Front threads interface 1/2" or 3/4" FNPT tee or process tank for Inline Use; Rear threads only for sealing sensor cable with conduit to ensure watertight seal for cable isolation</i>
<u>General Sensor Specifications:</u>	
Operating Temperature Range:	CPVC Body -5 to +70°C with HDPE junction, -5 to +95°C with Polypropylene junction RYTON Body -5 to +70°C with HDPE junction, -5 to +105°C with Polypropylene junction (Recommended for -5 to +70 °C in strong HF & fluoride at low pH media)
Operating Pressure Range:	1 to 100 psig (6.9 to 690 kPa) with 1/2" or 3/4" MNPT Front Threads for Inline Use
Sensor Body Material:	Chlorinated-Polyvinyl-Chloride (CPVC) Standard or RYTON® R-4-230BL (Poly-Phenylene-Sulfone, PPS) when Alpha Prefix " <b>PPS</b> " is invoked
Junction Support Matrix Material:	Compact Style High-Density Polyethylene (HDPE) or Polypropylene (PP) - <b>2412PP</b> Junction is protuded from sensor tip to maximize surface area in contact with solution
External Dimensions:	See Drawing 6-9 (Separate Drawings for 1/2" & 3/4" NPT Inline Sensor Configurations)
<u>pH Measurement Specifications:</u>	
Measurement pH Range:	0 to 14 pH (0 to 11 pH with High HF Resistant Option, Alpha Prefix "HF")
Measuring Glass Type:	Hemispherical Glass
pH Glass Dimensions:	0.315" (8.0 mm) DIA, 0.354" (9.0 mm) DIA with High HF Option (Alpha Prefix "HF")
Initial Impedance:	< 800 MΩ @ 25 °C, < 1,500 MΩ @ 25 °C with High HF Option (Alpha Prefix "HF")
Sodium Ion Error:	Less than 0.15 pH in sodium (Na <sup>+</sup> ) solutions at pH 14.00 (without "HF" option invoked)
Acidic Error:	Less than 0.05 pH in hydrochloric acid (HCl) at 0.00 pH (for standard version)
<u>Reference System Specifications:</u>	
Type:	Double Junction Standard
Reference Half Cell:	Ag/AgCl, Saturated KCl
Primary Junction:	Porous Ceramic, Sat. KCl in crosslinked polymer, Interfaced to Secondary Junction
Secondary Junction:	Compact Style Solid-State Non-Porous Cross-Linked Conductive Polymer embedded in HDPE or Polypropylene (PP) Support Matrix holds gross excess of KCl crystals assuring saturation at all temperatures for stability & long sensor service life in cases where little or no maintenance will be performed such as remote installations.
<u>Supported Order Options with Alpha Prefix Order Code Designation:</u>	3-Wire TC ("M") or Shielded Preamp Cable ("BL")
<b><i>Inquire to factory for specials</i></b>	
<u>Example Recommended Applications:</u>	Acid fluoride etching solutions or fluoride wastewater treatment systems where low pH conditions may exist or strong acid cleaning is required to remove fouling from sensor.
<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:	- Temperature Compensation Element (compatible type must be specified) - Analog Conventional Preamp (Contact factory for available options) - Smart digital sensor board for 3TX-HiQ-pH Intelligent pH & ORP transmitters
Analog Sensors without integral preamplifier:	Terminated with Male BNC connector (-MBNC) or Tinned Lead Wires (-TL)
Analog Sensors with integral preamplifier:	Terminated with Tinned Lead Wires (-TL) or Quick Disconnect NEMA 6P Snap (-Q7M)
Digital Smart Sensors:	Terminated with quick disconnect IP67/NEMA 6P rated waterproof & corrosion resistant snap HiQ4M connector. For 3TX-HiQ-pH Intelligent pH & ORP transmitters or HiQDT with RS-485 MODBUS RTU to interface with any suitable PLC or SCADA

REVISION HISTORY		
REV	DESCRIPTION	DATE



Hemispherical pH Glass Sensing Element

COMPACT HDPE JUNCTION

Knurled Section Max 1.12" Diameter

A

B

**NOTES**

1. All dimensions are in inches, unless otherwise indicated with tolerances as detailed below
2. Sensor body material of construction is CPVC standard or RYTON when Alpha Prefix "PPS" is invoked
3. Drawing shown in the standard without protective tines configuration used for inline installations.
4. Protective tines option is not available for 2X12 series pH/ORP sensors. These sensors are intended for inline type installations only. The recommended line size is a standard 3/4" FNPT pipe tee.
5. The rear 3/4" MNPT threads are only intended for sealing the back of cable with 3/4" conduit.
6. Use alternate sensor models available with protective tines option for immersion or submersion use.
7. Do not use any sensor beyond the factory defined maximum temperature or pressure rating.



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

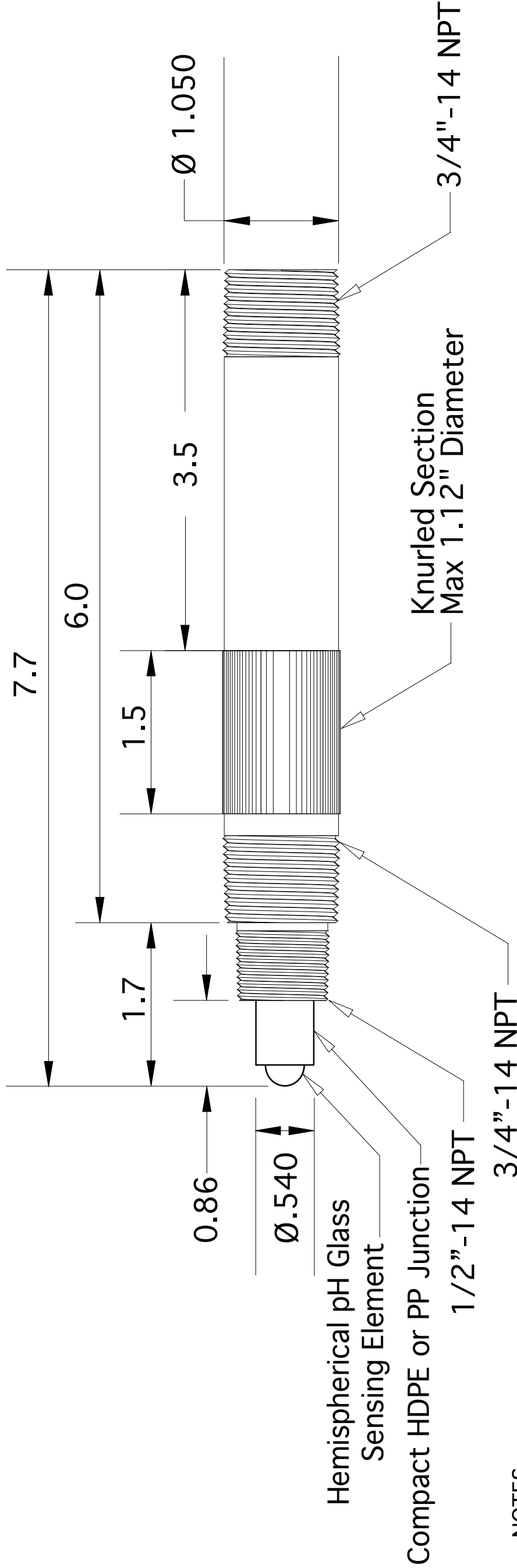
TITLE		3/4" MNPT Inline Installation Styles Only	
SIZE	PROJECT	DRAWING NO.	REV
B	INLINE	6-9 pH SENSORS	/
SCALE		MODEL	SHEET
Not to Scale		2X12 ONLY	1 OF 1

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REVISION HISTORY		
REV	DESCRIPTION	DATE



A

A

1/2" -14 NPT

3/4" -14 NPT

3/4" -14 NPT

Knurled Section  
Max 1.12" Diameter

3/4" -14 NPT

NOTES

1. All dimensions are in inches, unless otherwise indicated with tolerances as detailed below
2. Sensor body material of construction is CPVC standard or RYTON when Alpha Prefix "PPS" is invoked
3. Drawing shown in the standard without protective tines configuration for use in inline installations only.
4. Protective tines option is not available for 2X12 series pH/ORP sensors. These sensors are intended for inline type installations only. The recommended line size is a standard 1/2" FNPT pipe tee.
5. The rear 3/4" MNPT threads are only intended for sealing the back of cable with 3/4" conduit.
6. Use alternate sensor models available with protective tines option for immersion or submersion use.
7. Alternate insertion depths from standard 0.86 inch length are available as special order configurations.
8. Do not use any sensor beyond the factory defined maximum temperature or pressure rating.

B

B



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

TITLE 1/2" MNPT Inline Installation Styles Only			
SIZE B	PROJECT INLINE	DRAWING NO. 6-9 pH SENSORS	REV /
SCALE Not to Scale	MODEL 2X12 ONLY	SHEET 1	OF 1

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