



# IOTRON™ SENSORS

## INTEGRATED INDUSTRIAL pH SENSOR SPECIFICATIONS

<u>Sensor Part Number &amp; Short Description:</u>	<b>6413</b> – Acid Fluoride & HF Resistant pH Sensor - Inline, Immersion & Submersible Installations; Front ¾" MNPT for Inline & Rear ¾" MNPT for Immersion / Submersion
<u>Configuration Type:</u>	<i>Front threads interface ¾" FNPT of tee or process tank for Inline Use or Rear threads interface ¾" FNPT of insertion tube for immersion or waterproofing seal for submersion</i>
<u>General Sensor Specifications:</u>	
Operating Temperature Range:	-5 to 70°C
Operating Pressure Range:	1 to 100 psig (6.9 to 690 kPa) with ¾" MNPT Front Threads for Inline Installations
Sensor Body Material:	Chlorinated-Polyvinyl-Chloride (CPVC)
Junction Support Matrix Material:	High-Density Polyethylene (HDPE)
External Dimensions:	See Drawing 6-5
<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) solutions at 0.00 pH (for standard version)
<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 Support Matrix holds excess KCl assuring saturation at all temps for stability & long sensor service life
<u>Supported Order Options with Alpha Prefix Order Code Designation:</u>	Ammonia gas resistant ("A"), Organic Media Resistant ("L"), Solvent Resistant ("TS"), 3-Wire TC ("M"), ACCU-TEMP Fast TC ("X"), Reduce to 2 ea 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>	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:	<ul style="list-style-type: none"><li>- Temperature Compensation Element (compatible type must be specified)</li><li>- Solution Ground Liquid Earth, 316SS (alpha prefix "Y"), or Platinum (alpha prefix "Pt")</li><li>- Analog Conventional or Differential Preamplifier (Contact factory for available options)</li><li>- Smart digital sensor board for use with 3TX-HiQ-pH Intelligent pH &amp; ORP transmitters</li></ul>
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)
Analog Dual pH & ORP All-in-one Sensors <i>without integral preamplifier style only:</i>	Terminated with tinned lead wires (-TL), Alpha Prefix "PtD", 2 each reference half-cells allow for simultaneous use on two completely separate input channels or transmitters
Digital Smart Sensors:	Terminated standard with quick disconnect IP67/NEMA 6P rated waterproof & corrosion resistant snap HiQ4M connector. For 3TX-HiQ-pH Intelligent pH & ORP transmitters or HiQDT style with RS-485 MODBUS RTU to interface with any suitable PLC or SCADA (Minimum Order Quantity may apply for HiQDT style version, contact factory for details)

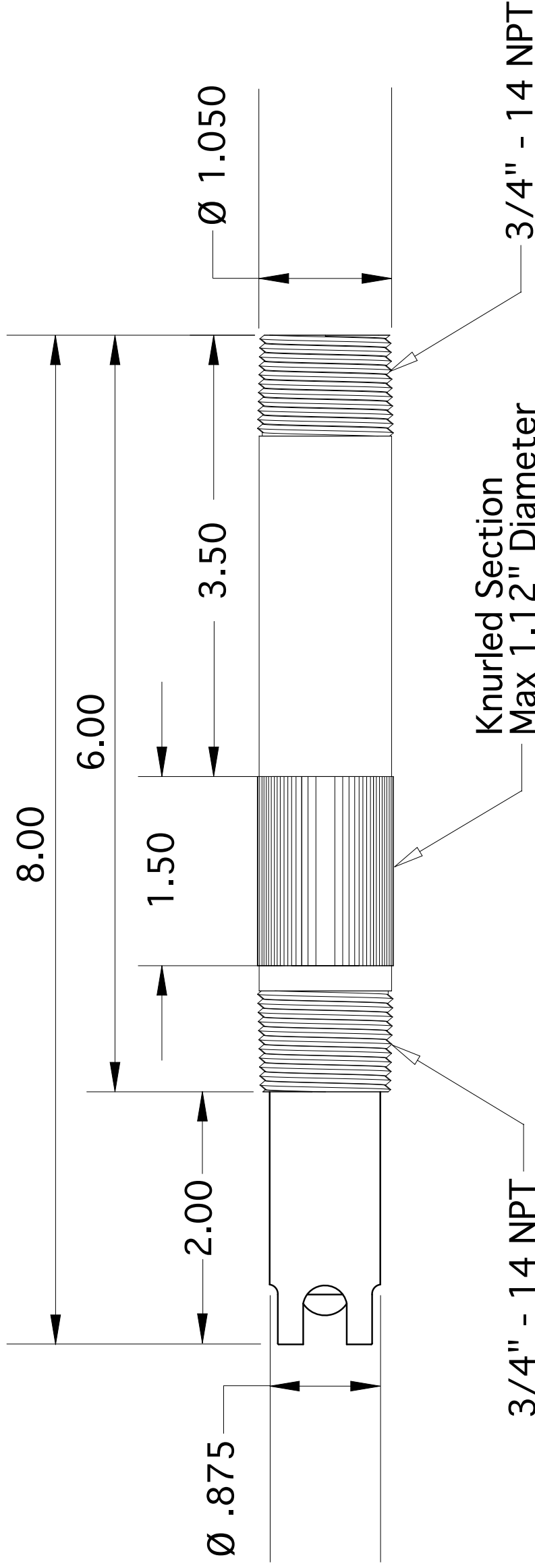
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REVISION HISTORY		
REV	DESCRIPTION	DATE

APPROVED



A

A

NOTES

- All dimensions are in inches, unless otherwise indicated with tolerances as detailed below
- Sensor body material of construction is CPVC (6X13/6X12), RADEL (6X32), PEEK (6X42), RYTON (6X53/6X54)
- 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 7.5 inches in length.  
The max displacement for hemispherical pH glass is 0.3" yielding a max insertion depth of 1.8 inches past threads & overall max length of 7.8 inches.
- 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>

TOLERANCES		DRAWN BY	RH
1 Place: $\pm .1$	3 Places: $\pm .005$	CHECKED BY	TADP
2 Places: $\pm .01$	4 Places: $\pm .0005$	APPROVED BY	MJP
Angular: $\pm 0.25^\circ$			

TITLE  
3/4"-3/4" MNPT Inline / Immersion / Submersible

SIZE PROJECT  
B IMMERSION DRAWING NO. 6-5 pH SENSORS /

SCALE Not to Scale MODEL 6X32.6X42.6X53.6X54 SHEET 1 OF 1

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