



IOTRON™ SENSORS

INTEGRATED INDUSTRIAL pH SENSOR SPECIFICATIONS

<u>Sensor Part Number & Short Description:</u>	6411 – 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:	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 ¾" MNPT Front Threads for Inline Installations
Sensor Body Material:	Chlorinated-Polyvinyl-Chloride (CPVC) Standard or RYTON® R-4-230BL (Poly-Phenylene-Sulfone, PPS) when Alpha Prefix " PPS " is invoked (MOQ may apply)
Junction Support Matrix Material:	Compact Style High-Density Polyethylene (HDPE) or Polypropylene (PP) - 6411PP
External Dimensions:	See Drawing 6-3 or Drawing 6-5 in "GR" protective tines configuration
<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 ⁺) 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
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 KCl crystals assuring saturation at all temperatures for stability & long sensor service life in applications 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"), Add Protective Tines 4 ea ("GR"), Add Protective Tines 2 ea ("GRO"), Shielded Preamp Cable ("BL")
<i>Inquire to factory for specials</i>	
<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. Optional protective tines "GR" or "GRO" configuration is recommend for immersion and submersible type installations.
<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:	- Temperature Compensation Element (compatible type must be specified) - Analog Conventional Preamplifier (Contact factory for available options) - Smart digital sensor board for use with 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 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)

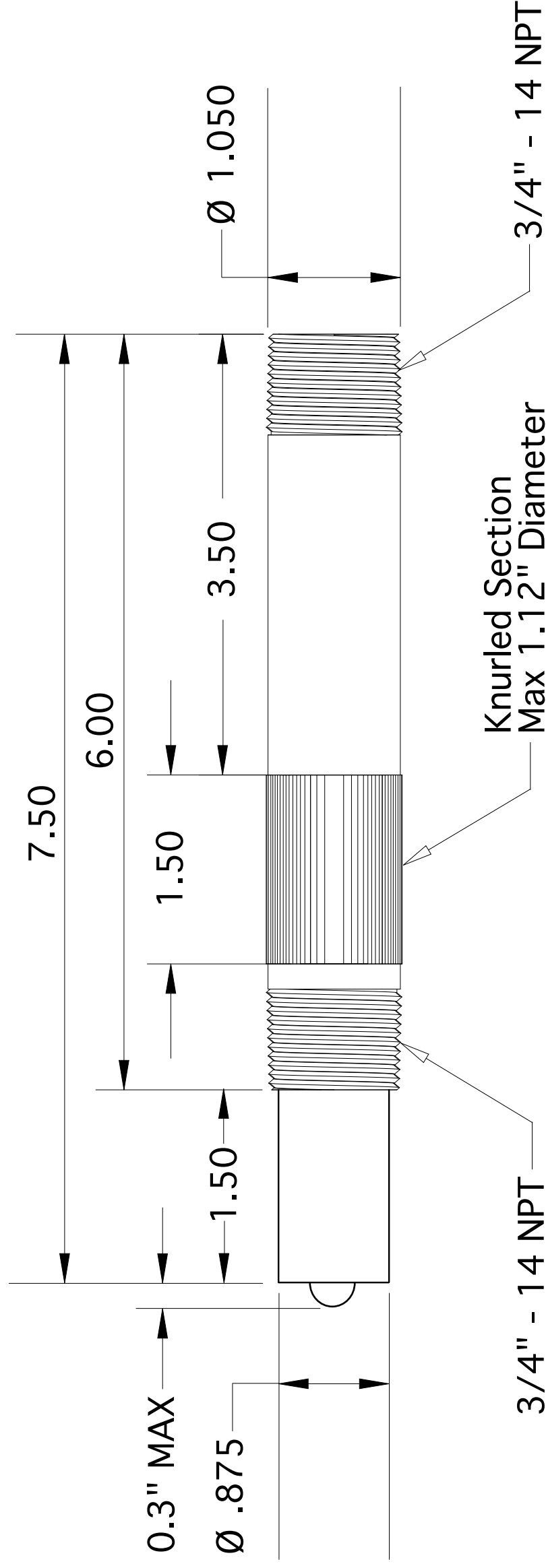
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REVISION HISTORY		
REV	DESCRIPTION	DATE

APPROVED



NOTES

- All dimensions are in inches, unless otherwise indicated with tolerances as detailed below
- Sensor body material of construction is CPVC standard or RYTON when Alpha Prefix "PPS" is invoked
- Drawing shown in the standard without protective tines configuration typical for inline installations.
- In no guard configuration the max displacement for hemispherical pH glass is 0.3" yielding max insertion depth of 1.8 inches past front 3/4" MNPT threads yielding an overall max length of 7.8 inches.
- Optional protective tines guard recommended for immersion & submersible installations (not shown).
 "GR" Alpha Prefix option yields four (4) each protective tines, 90 degrees apart or
 "GRO" Alpha Prefix option yields two (2) each protective tines, 180 degrees apart
- Overall sensor length is 8.00 inches in either the
 "GR" or "GRO" configuration with 0.5 inch guard.
- 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"-3/4" MNPT Inline / Immersion / Submersible	
SIZE	PROJECT	DRAWING NO.	REV
B	IMMERSION	6-3 pH SENSORS	/
SCALE	Not to Scale	MODEL	SHEET 1 OF 1

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