

### **ZEUS™** **ANALOG pH SENSORS WITH ULTRA-RUGGED CONSTRUCTION**

Description of Most Important  
Common Core Features:

*Features for each configuration in  
addition to common core features  
itemized to differentiate models.*

Universal, Conventional & Differential  
preamplifier configurations are in stock  
for smaller orders; Available for **Dispatch  
on Same Day as Order is Accepted.**

For larger orders of any configuration  
please inquire regarding lead time.

#### Process Connections:

#### General Sensor Specifications:

Operating Temperature Range:

Operating Pressure Range:

Sensor Body Material:

Junction Support Matrix Material:

External Dimensional Drawing:

#### pH Measurement Specifications:

Measurement pH Range:

Measuring Glass Type:

pH Glass Dimensions:

Initial Impedance:

Sodium Ion Error:

Acidic Error:

#### Reference System Specifications:

Type:

Reference Half Cell:

Triple Junction:

Primary & Secondary Junctions:

#### Some Selected Examples of Recommended Applications:

Storage and Shelf Life:

#### **Industrial pH Sensors for Severe Service Inline, Immersion & Submersible Installs**

- Waterproofing seal for complete cable isolation for submersion and field washdowns
- Solid-state reference nearly impervious to ammonia, chlorine, sulfides & most solvents
- ACCU-TEMP Fast Response Pt1000 Temperature Compensation "TC" element
- Rugged thick 3.0mm (0.12") protective tines guard configuration, 4 each 90° apart
- Thick 5.6mm (0.22") sensor body for 1.66" O.D. to endure tough mechanical wear
- Universal configuration 7.6 meters (25 feet), Conventional & Differential Preamplifier Configurations 6 meters (20 feet) of integral cable; Thick PVC jacket for aggressive use

#### **ZEUS™ pH SENSOR – UNIVERSAL CONFIGURATION**

- \* Solution ground liquid earth element with Hastelloy C-276 Material of Construction
- \* Tinned lead terminations must be wired directly into transmitter terminals

#### **ZEUS™ pH SENSOR – WITH CONVENTIONAL PREAMPLIFIER**

- \* Integral Analog Conventional Preamplifier for low-noise operation and long cable runs
- \* Waterproof NEMA 6P rated quick disconnect Q7M Snap Corrsion Resistant Connector
- \* Up to 100 meters (330 feet) low-noise preamplified signal using Q7F snap extensions

#### **ZEUS™ pH SENSOR – WITH 5-WIRE DIFFERENTIAL PREAMPLIFIER**

- \* Solution ground liquid earth element with Hastelloy C-276 Material of Construction
- \* Integral 5-wire Differential Preamplifier for low-noise operation and long cable runs
- \* Waterproof NEMA 6P quick disconnect HiQ4M Snap Corrsion Resistant Connector
- \* Up to 305 meters (1,000 feet) low-noise preamplified signal with Q7F snap extensions

1" MNPT Threads on Front for Inline Screw-in Installations

1.25" MNPT Threads on Back for Immersion & Submersible Installations

-15 to 150°C

1 to **150 psig** (6.9 to 1035 kPa) for **ZEUS™ pH SENSOR UNIVERSAL**

1 to **200 psig** (6.9 to 1379 kPa) for **ZEUS™ pH SENSOR WITH PREAMPLIFIER**

RADEL® R-5000 NT (Poly-Phenyl-Sulfone, PPSU)

KYNAR® (Poly-Vinylidene-Fluoride, PVDF)

See ZEUS™ Analog pH Sensor 1"-1.25" MNPT Inline / Immersion / Submersible

-0.5 to +14.5

**Hemispherical** Green Glass (MUGG) - **ZEUS™ UNIVERSAL**

**Low-Profile Parabolic** Thick-Wall Break-Resistant **ZEUS™ WITH PREAMPLIFIER**

0.315" (8.0 mm) DIA

< 800 MΩ @ 25 °C for **ZEUS™ UNIVERSAL CONFIGURATION**

< 1,500 MΩ @ 25 °C for **ZEUS™ WITH PREAMPLIFIER CONFIGURATIONS**

Less than 0.15 pH in sodium (Na<sup>+</sup>) solutions at pH 14.00

Less than 0.05 pH in hydrochloric acid (HCl) solutions at 0.00 pH

Triple Junction Standard

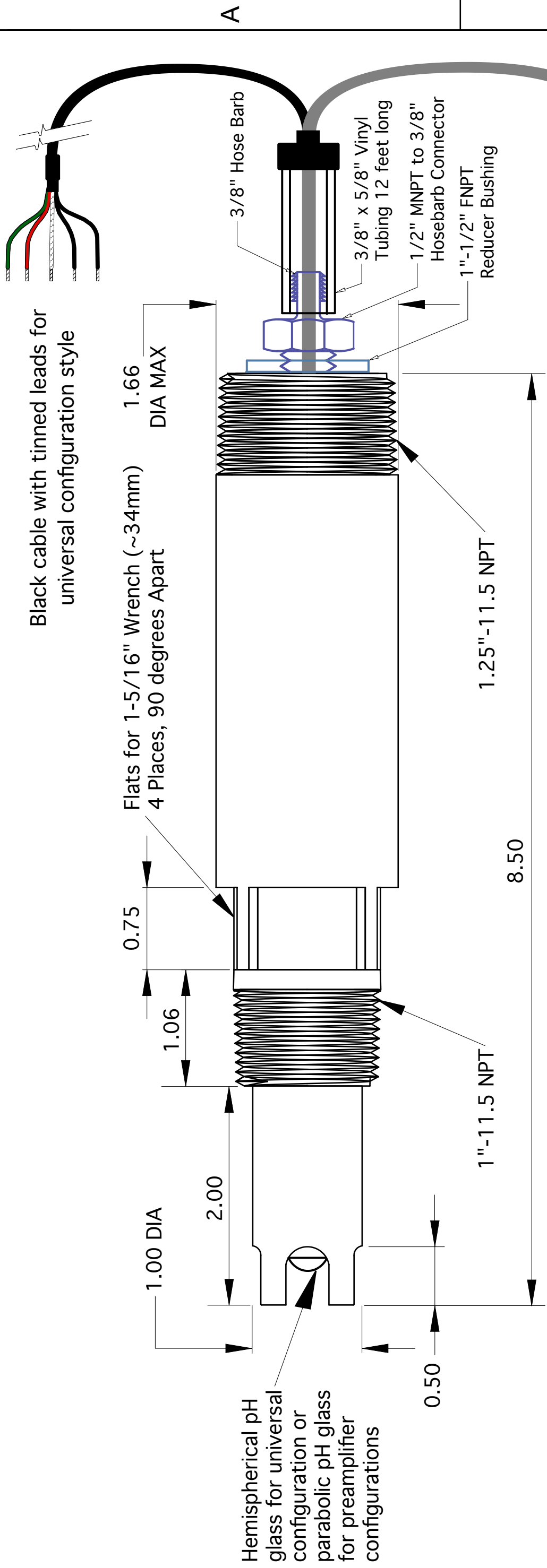
Ag/AgCl, Saturated KCl

- Solid-State Non-Porous Cross-Linked Polymer embedded in Kynar Support Matrix holds excess KCl assuring saturation at all temps for stability & long sensor service life
- Porous Ceramic, Saturated KCl in crosslinked polymer, Interfaced to Triple Junction

Industrial & mining autoclaves, abrasive slurry & high viscosity solutions, sulfide service. Any measurement where aggressive chemical cleaning is needed to remove fouling or low-maintenance operation is required with minimal cleaning and re-calibration.

**Not for use in low conductivity, steam sterilization or steam type processes.**

One (1) year from date of dispatch from ASTI factory when stored at indoor ambient room temperature with proper orientation & protector cap.



Black cable with tinned leads for universal configuration style

Gray cable with Snap Connectors for Pre-amplifier Configurations

**NOTES**

1. All dimensions are in inches with tolerances as detailed below
2. Sensor body material of construction is RADEL R-5000 NT
3. Support matrix for solid-state cross-linked conductive polymer reference system is KYNAR (PVDF) material of construction
4. Protective tines 4 places, 90 degrees apart, 0.12 inches (3.0mm) thick
5. Black composite cable for universal sensor configuration 25 feet cable length
6. Conventional or 5-wire differential preamplifier configurations use Q7M snap connectors with 20 feet cable. Use Q7F snap cable extensions to achieve the desired total cable length for field installation.
7. See hook-up schematic to interface tinned leads to desired supported mating pH transmitter.
8. 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>

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

TITLE 1"-1.25" MNPT Inline / Immersion / Submersible			
SIZE B	PROJECT ULTRA RUGGED	DRAWING NO. ZEUS™	REV /
SCALE Not to Scale	MODEL Universal or Preamplifier	SHEET 1	OF 1