



IOTRON™ SENSORS

INTEGRATED INDUSTRIAL ORP SENSOR SPECIFICATIONS

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| <u>Sensor Part Number & Short Description:</u> | 6841 – Oxidation Reduction Potential (ORP) Sensor for Inline Use with ¾” MNPT Front Threads and Immersion/Submersion Type Installations with 1” MNPT Rear Threads |
| <u>Configuration Type:</u> | <i>Interface with ¾” FNPT threads of tee or process tank for Inline Use or 1” FNPT threads on insertion tube for immersion or waterproofing seal for submersible installations</i> |
| <u>General Sensor Specifications:</u> | |
| Operating Temperature Range: | -5 to 105°C (-35 to 150°C with Extreme Dehydration Resistant “E” Option – PVDF Only) |
| Operating Pressure Range: | 1 to 150 psig (6.9 to 1035 kPa) with ¾” MNPT Front Threads for Inline Installations |
| Sensor Body Material: | KetaSpire® KT-880 NT (Poly-Ether-Ether-Ketone, PEEK) |
| Junction Support Matrix Material: | KYNAR® (Poly-Vinylidene-Fluoride, PVDF) Standard or Polypropylene (PP) - 6841PP |
| External Dimensions: | See Drawing 6-1-Pt |
| <u>ORP Measurement Specifications:</u> | |
| Measurement mV Range: | -2,000 to +2,000 mV absolute |
| Measuring Glass Type: | Platinum Ball in Low Profile Configuration; Suitable for Slurries & High Pressure/Velocity |
| pH Glass Dimensions: | 0.197” (5.0 mm) DIA |
| <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 Kynar/Polypropylene 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”), Chlorine gas resistant (“C”), 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”) |
| <i>Inquire to factory for specials</i> | |
| <u>Example Recommended Applications:</u> | Any process media where the redox (ORP) potential is monitored or controlled. Can be combined with other sensor options available for pH sensors such as high temperature resistant, slurry & viscous material resistant, acid fluoride & HF resistant, pulp and paper resistant, sulfide resistant, dissolved gas and organic solvent resistant or saturated brine resistant. Any measurement where aggressive chemical cleaning is needed to remove fouling or low-maintenance operation is required with minimal cleaning and re-calibration. |
| <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. Extreme Dehydration Resistant Option (Alpha Prefix “E”) sensors are suitable for cold storage down to -35 °C (-31 °F). |
| <u>Available Configurations & Options:</u> | |
| Integrated Components: | <ul style="list-style-type: none">- Temperature Compensation Element (compatible type must be specified)- Solution Ground Liquid Earth, 316SS (alpha prefix “Y”), or Platinum (alpha prefix “Pt”)- Analog Conventional or Differential 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 | | |
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| REV | DESCRIPTION | DATE |
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DESCRIPTION

DATE

APPROVED

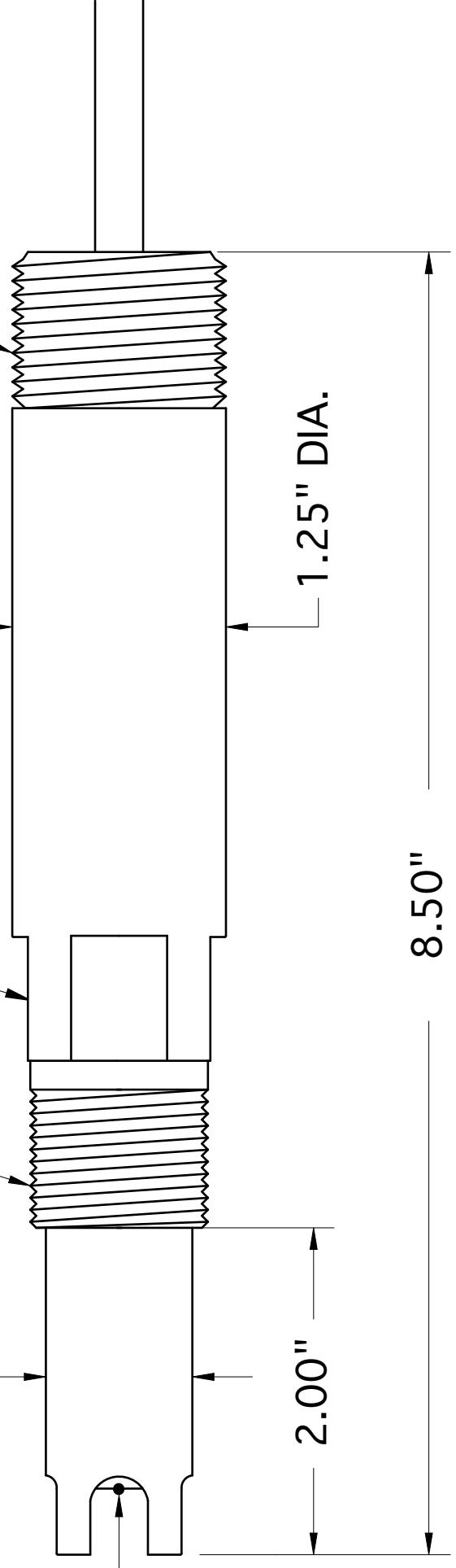
Platinum Low-Profile Ball
Sealed into glass for
ORP Sensing Element

3/4" - 14 NPT

0.875"
DIA.

FLATS FOR
1 1/16" WRENCH

1" - 11.5 NPT
1.31" DIA MAX



A

A

NOTES

- All dimensions are in inches, unless otherwise indicated with tolerances as detailed below
- Sensor body material of construction is RADEL (6X31), PEEK (6X41) or RYTON (6X51, 6X52)
- 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 8.0 inches in length.
The max displacement for ORP sensing element is 0.1" yielding a max insertion depth of 1.6 inches past threads & overall max length of 8.1 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>

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|--------------|-----------|---|--------|
| TITLE | | 3/4"-1" MNPT Inline / Immersion / Submersible | |
| SIZE | PROJECT | DRAWING NO. | REV |
| B | IMMERSION | 6-1-Pt Low-Profile ORP | / |
| SCALE | | MODEL | SHEET |
| Not to Scale | | 6X31,6X41,6X51,6X52 | 1 OF 1 |

TOLERANCES

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

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