



# IOTRON™ SENSORS

## INTEGRATED INDUSTRIAL ORP SENSOR SPECIFICATIONS

<u>Sensor Part Number &amp; Short Description:</u>	<b>8851</b> – Oxidation Reduction Potential (ORP) Sensor for Twist Lock Quick Disconnect Double O-Ring seals for inline interface & 1" MNPT for immersion/submersible interface
<u>Configuration Type:</u>	<i>Interface with Twist Lock Quick Disconnect Receptacle for Inline Use or 1" MNPT rear threads with insertion tube for immersion or waterproofing seal for submersible installs</i>
<u>General Sensor Specifications:</u>	
Operating Temperature Range:	-5 to 105°C (-15 to +135 °C in High Temperature Resistant Configuration – PVDF Only)
Operating Pressure Range:	1 to 50 psig (6.9 to 345 kPa) with 1"MNPT KYNAR® (PVDF) Twist Lock Receptacle 1 to 100 psig (6.9 to 690 kPa) with 1"MNPT Ketaspire® PEEK Twist Lock Receptacle
Sensor Body Material:	RYTON® R-4-230BL (Poly-Phenylene-Sulfone, PPS)
Junction Support Matrix Material:	KYNAR® (Poly-Vinylidene-Fluoride, PVDF) Standard or Polypropylene (PP) - <b>8851PP</b>
O-Rings Material of Construction:	Viton®-75 is standard, 2 each redundant O-rings are used to ensure seal integrity; CV-75 ("W"), Simriz® 485 ("U") or Kalrez® 4079 ("K") are available as upgrade options
External Dimensions:	See Drawing 8-1-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"), Organic Media Resistant ("L"), Solvent Resistant ("TS"), 3-Wire TC ("M"), ACCU-TEMP Fast TC ("X"), Add Protective Tines 4 ea ("GR"), Add Protective Tines 2 ea ("GRO"), Shielded Preamp Cable ("BL")
<b><i>Inquire to factory for specials</i></b>	
<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.
<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) - 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 with IP67/NEMA 6P rated waterproof & corrosion resistant snap 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 Quantities may apply)

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

O-RINGS (2 EACH)

LOCKING PINS FOR TWIST-LOCK  
QUICK-DISCONNECT FEATURE

1" - 11.5 NPT  
1.31" DIA MAX

0.95"  
DIA.

1.69"

0.12" MAX

1.25"

8.00"

A

A

NOTES

1. All dimensions are in inches, unless otherwise indicated with tolerances as detailed below
2. Sensor body material of construction is RADEL (8X31), PEEK (8X41) or RYTON (8X51, 8X52)
3. O-ring material of construction is Viton-75 standard; CV75, Simriz 485 & Kalrez 4079 Optional
4. Drawing as shown is without protective tines. The maximum displacement of the sensor past the end of the body in this configuration is 0.12" inches yielding a max overall length of 8.12 inches.
5. With Protective tines "GR" (4 places, 90 degrees apart) or "GRO" (2 places, 180 degrees apart) configurations overall sensor length is 8.00 inches.
6. This sensor is only suitable for inline installation when used with ASTI 1" MNPT Twist Lock Receptacle.
7. Do not use any sensor beyond the factory defined maximum temperature or pressure rating.

B

B

REVISION HISTORY		
REV	DESCRIPTION	DATE

APPROVED	



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

TITLE <b>Sensor for Inline Twist Lock Quick Disconnect Use</b>			
SIZE <b>B</b>	PROJECT <b>TWIST-LOCK</b>	DRAWING NO. <b>8-1-Pt Low-Profile ORP</b>	REV <b>/</b>
SCALE Not to Scale	MODEL 8X31,8X41,8X51,8X52	SHEET 1	OF 1

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

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