

ST-71XSS Stainless Steel Water Quality Sensor Series

Inline pH & ORP Smart Sensors with Replaceable Heads

Product Description

The Pyxis ST-710SS series of pH and pH/ORP composite sensors are specifically designed to simplify installation, calibration and in-use operation in process water, industrial water, wastewater and cooling water applications. These sensors are uniquely designed to offer an embedded transmitter and can be utilized in both 4-20mA or RS-485 Modbus formats. When utilized in RS-485 Modbus format, these sensors also provide a temperature output signal. These features dramatically improve application possibilities allowing the ST-710SS series of sensors to be directly connected to any micro-processor-based controller, PLC and Distributed Control System. The ST-710SS series oversized platinum disk for ORP and the flat pH bubble sensing elements increase their resistance to highly turbid waters and contamination. The enlarged salt bridge design with large junction capacity also ensures a significantly longer sensor life with minimal maintenance.

These devices are ideally suited for hard to measure waters where conventional pH & ORP sensors would have otherwise failed or required high maintenance costs. The ST-710SS series of sensors are produced with a 304 Stainless Steel Body and are designed with a removable and replaceable electrode head assembly. Each sensor offers a unique design Electrode Head Assembly incorporating the complete sensor electrode and appropriate electrolyte solution in an easily replaceable format. Each sensor offers a six-foot cable with 8-Pin quick adapter as well as a 1.5-foot flying lead wire with 8-pin adapter for rapid installation and replacement. The ST-710SS series are provided with the ST-001 Pyxis standard $\frac{3}{4}$ " NPT-CPVC installation Tee for in-line flow applications but may also be installed in submersed applications using the MA-102S Submersion Adapter Kit. Additionally, larger pipe size installation Tee's are available from Pyxis Lab.

Installation & Applications

- Industrial Process & Cooling Water Applications
- Fresh / Brackish / Sea Water
- Raw / Influent Water
- Wastewater Effluent
- Surface Water & Storm Water

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Features

- Simple & Replaceable Electrode Head
- Accurate & Stable Measurement with Ultra-Low Drift
- Built-In Transmitter without Pre-Amplifier or Meter Head
- Dual Outputs both 4-20mA Isolated Signals or RS-485 Modbus
- Long-Distance Transmission with Higher Stability & Accuracy
- Wireless Calibration, Diagnostics, Data Trend via uPyxis® app when used with MA-CR Adapter
- Tolerant to Frozen Conditions during Shipment or Storage for Short Periods
- Large Junction Capacity
- 3-4X Electrolyte Solution Content
- Enlarged Platinum Disk
- Longer Service Life

Sensor Specifications

Item	ST-710SS	ST-711SS	ST-712SS
P/N	53030	53031	53032
ORP Range	N/A	±1,500mV	±1,500mV
Precision	N/A	±1mV or 1% of the Value	±1mV or 1% of the Value
pH Range	0–14pH	N/A	0–14pH
Precision	±0.01pH or 1% of the Value	N/A	±0.01pH or 1% of the Value
Response Time	95% within 5 seconds		
Power Supply	22–26VDC, Power Consumption - 2W		
Storage Temperature	-7–60 °C (20–140 °F)		
Outputs	Isolated 4-20mA Analog Outputs & Isolated RS-485 Modbus Digital Output		
Dimensions	6.8in (172.7mm) L x 1.44in (36.6mm) D		
Installation	ST-001 Inline Tee Assembly 3/4in FNPT Glue & Thread (INCLUDED)		
Body Material	304 Stainless Steel		
Weight	530g (1.16lbs)		
Operational Pressure	100psi (6.9Bar)		
Operational Temp.	4–49 °C (40–120 °F)		
Wet Material	Quartz & UPVC		
Rating	IP67, Fully Dustproof & Waterproof		
Regulation	CE Marked		
Cable Length	MA-4.9CR Cable (8Pin M/F Adapters – 4.9ft); MA-1.5CR Cable (8Pin M Adapter/Flying Leads)		
Electrode Service Life	2 Years		
Electrode Warranty	6 Months		
Sensor Body Warranty	13 Months		

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Optional Accessories & Replaceable Electrode Heads

The ST-710SS Series each offer easily replaceable electrode heads for continued sensor use and years of service. Listed below are the optional accessories available for use with the ST-710SS Series of sensors, including the Electrode Head Replacement units.

Item & Description	P/N
EH-710 Replacement pH Electrode Head for ST-710SS*	53033
EH-711 Replacement ORP Electrode Head for ST-711SS*	53034
EH-712 Replacement pH + ORP Electrode Head for ST-712SS*	53035
ST-001 Inline CPVC Tee Assembly <i>(Included with Purchase of Sensor)</i>	50704
ST-007 Stainless Steel Tee Assembly with 1/4in OD Swagelok Compression	50700-A51
MA-CR Inline Bluetooth® Adapter	MA-CR
MA-NEB USB Bluetooth® Adapter for Laptops/Desktops	MA-NEB
MA-50CR 50' 8-PIN Extension Cable	50743
PowerPACK-2 Dual Channel Power/Bluetooth® Adapter with (2) 4-20mA Pass Through	MA-BLE-2
ORP-200mV Calibration Standard Solution	57020
4-7-10 pH Combination Calibration Standard Solution Kit	57007

EH-710*



EH-711*



EH-712*



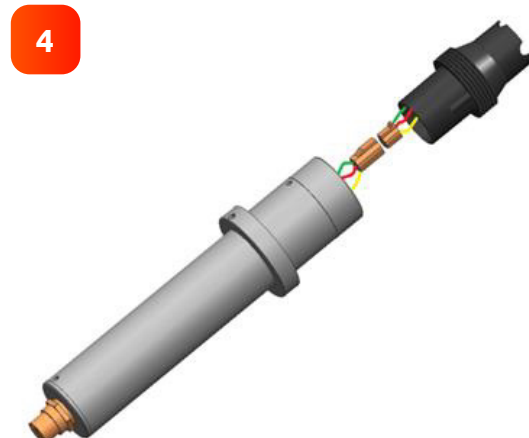
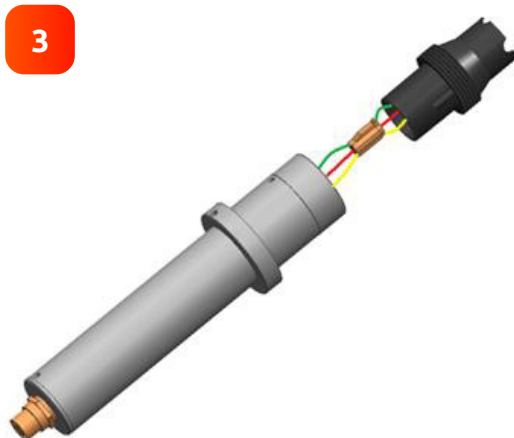
Cleaning & Calibration

The ST-710SS Series sensors are uniquely designed and highly stable. Simple maintenance cleaning and calibration of the sensors on a regular basis should enable very long operational life and accuracy. Cleaning and calibration frequencies are application dependent on the contaminant level of suspended solids, iron, manganese, oil, and bacteria, etc... When calibration is required, the ST-710SS Series can be wirelessly diagnosed, cleaned and calibrated using the MA-CR or PowerPACK Series Bluetooth adapters and the uPyxis APP for Mobile or Desktop.



Replacing the EH-71X Electrode Head

1. Ensure your sensor is turned off/powered down.
2. Ensure your sensor is dry and make sure to avoid allowing water enter the sensor!
3. Hold the 710SS Series main body with one hand and use the other hand to twist the stainless-steel locking ring connecting the black electrode counterclockwise, until the front end of the black electrode is completely unscrewed. *(Figure 2)*
4. Pull out the electrode head. *(Figure 3)*
5. Gently disconnect the electrode plug and remove the head. *(Figure 4)*
6. To assemble the new electrode head, gently insert the connect the plug and push the wires into the main housing. Gently insert the new electrode head into the sensor main body. The two protrusions on the electrode head should be aligned with the notch in the main sensor housing.
7. Finally, twist the stainless-steel lock ring of the sensor in a clockwise direction until the threads of the electrode head enter the ST-710SS Series housing. *(Figure 1)*



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