

# ST-600 Series

## Inline Disinfection + Temperature Sensors

### Description

The Pyxis ST-600 Series inline sensors are designed for use in qualitative measurement of real-time mass/mass concentration of Chlorine in Sodium Hypochlorite from manufactured liquid chemical concentrate (bleach) or diluted liquid through electrolysis, as well as in-situ Chlorine Dioxide (ClO<sub>2</sub>) generation. Unlike typical amperometric sensors for disinfection liquids in ppm level, the ST-600 Series inline probes directly measure the optical density of the Bleach or Chlorine Dioxide solution in percentage (%) levels without dilution using a UV light source. The ST-600 Series probes have a built-in reference light source and a reference light detector in addition to the main light source and main light detector. This configuration ensures a long-term stable measurement of the disinfectant concentration. These sensors are factory calibrated using ultra-pure solutions of Sodium Hypochlorite and Chlorine Dioxide by Pyxis Lab Inc. Raw material qualities vary globally and as such field calibration may be required by the user to adjust for lower quality raw material used in the point of application.

These probes feature an expanded detection range and an RTD temperature compensated output signal, allowing the user to measure higher temperature compensated concentrations of industrial Bleach / ClO<sub>2</sub> respectively while obtaining a sample temperature measurement. This feature is highly valuable in compensating for the impact of atmospheric temperature conditions on oxidant solution concentration readings. Pyxis Lab's unique sensor and optical channel design enables these sensors to be installed in both direct contact and non-contact applications. For high volume chemical streams, the ST-001 inline Tee assembly ¾" NPT is utilized. For low flow chemical applications the clear Teflon Tubing ¼" OD may be used to pass through the sensor optical channel for direct concentration measurement.

### Typical Applications

- Hypochlorite Through Electrolysis Generation (ST-604)
- Chlorine Dioxide Generation (ST-601)
- Monochloramine Generation Precursor (ST-600)
- Primary / Secondary Disinfection / Commercial / Institutional
- Pulp & Paper



ST-600 Series Inline Sensors  
 Above - ¼" Tube adapter installation  
 Below - ¾" Inline Tee Installation

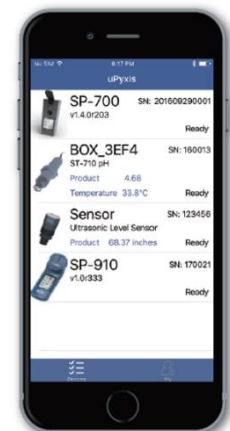


## Features

- Break-through technology measures disinfection liquids from low to high concentration
- Direct read technology without dilution or reagent.
- Long maintenance and calibration cycle – 6 months typical.
- Convenient ¾" NPT Inline Tee installation (ST-001) for Large Pump Suction Side
- Convenient ¼" Teflon Tubing Installation for Small Pump Discharge Side
- Probe Cleanliness Diagnostics via uPyxis and Modbus
- Wireless Calibration via **uPyxis** Mobile or Desktop APP
- Expanded Concentration Range
- Temperature Compensation (RTD) of Oxidant Concentration and Temperature Output Signal

### uPyxis Mobile & Desktop APPS for Wireless Setup, Diagnostics & Calibration

The uPyxis APP manages all Pyxis portable meter and inline sensors on mobile and desktop devices, including Apple iPhones and Samsung Android smartphones. When connected to the Pyxis ST-600 series inline sensors, the uPyxis APP enables users to conduct a wireless probe cleanliness diagnostics and calibration. This unique feature conducts an internal assessment of the sensor cleanliness condition within 5-seconds allowing the user to determine if the probe is need of cleaning prior to calibration. Once cleaned, the user can proceed to conducting a wireless 2 -point calibration of the ST-600 series sensor via the uPyxis APP all from the touch of their smart device. The uPyxis direct diagnosis and calibration of the sensor itself eliminates unnecessary time wasted with calibrating the probe through the receiving controller and ensures the highest degree of accuracy. When connected in RS-485 Modbus format, Pyxis Lab can provide the user with Cleanliness Diagnostics register data enabling users to utilize this unique sensor function within their own controller.



**\*Note\*** The uPyxis Mobile APP is evolving rapidly and users can find the latest version at no cost on Apple iStore or Google Play. The uPyxis Desktop APP may be downloaded at <https://pyxis-lab.com/support-2/> For wireless access to all Pyxis devices via uPyxis, users will require the inline MA-WB Bluetooth Adapter (P/N: MA-WB) or POWERPack Series Auxiliary Box. Details can be found in the Order Information section of this Data Sheet.

## Specifications – ST-600 Series Inline Sensors

Item	ST-600	ST-601	ST-604
Part Number	50231	50232	50233
Target	% Chlorine in Bleach	% ClO <sub>2</sub> in Solution	% Chlorine in Bleach
Typical Application	Liquid Concentrate	Produced ClO <sub>2</sub> Solution	Electrolysis Effluent
Concentration Output Range (4-20mA)	0.01-16.0% mass/mass (RTD Compensated)	0.01-0.35% mass/mass (RTD Compensated)	0.01 – 2.00% mass/mass (RTD Compensated)
Temperature Output Range (4-20mA)	4mA – 0 °C / 32 °F 20mA - 100 °C / 212 °F		
Resolution	0.01 in percentage		
Accuracy	±2% of reading or 0.1 percentage, whichever is greater		
Method	UV Absorbance		
Power Supply	22-26VDC, 2W		
Outputs	Isolated 2x 4-20mA Analog Isolated RS-485 Modbus		
Dimension	Length 6.8-inch, body diameter 1.44 inch		
Weight	0.37 pounds		
Installation Formats	¼" OD (6.4 mm) Clear Teflon tubing passed through sensor optical channel ST-001 Inline Tee ¼" CPVC		
Material	UPVC		
Pressure	Up to 100 psi (6.9 Bar)		
Temperature	Operating: 4 °C – 50°C (40-120 °F) Storage: -7 °C - 60 °C (20 - 140 °F)		
Cable Length	5 feet (Bulkhead Cable w/ IP67 Adapter – 7 pin) 1.5 foot (Flying Lead Cable w/ IP67 Adapter – 7 pin) Optional Extension Cables Available		
Calibration	Two-point calibration against standard solutions		
Rating	IP67		
Regulation	CE / RoHS		

**\*NOTE\*** The ST-600 series sensors are manufactured with an optical channel composed of compression installed quartz tubing with ¼" Inner Diameter. This optical channel material is not designed to withstand extreme caustic content outside of global industrial bleach quality specifications. For applications requiring exposure of the sensor to extreme caustic content, the ¼" OD Clear Teflon Tubing Installation is recommended. This method eliminates chemical from touching the optical channel.

## Order Information

ST-600 Inline Bleach Concentration Sensor (0-16% + Temperature)	50231
ST-601 Inline ClO <sub>2</sub> Concentration Sensor (0-0.35% + Temperature)	50232
ST-604 Inline Bleach Concentration Sensor (0-2% + Temperature)	50233

## Optional Accessories Information

MA-WB Bluetooth Adapter ( <i>Enables Wireless Calibration with uPyxis APP</i> )	MA-WB
PowerPACK-1 ( <i>Single Chanel Auxiliary Power Supply w/Bluetooth for ST/LT Series Sensors</i> )	MA-BLE-1
Pyxis ST-Series Cleaning Kit ( <i>Includes 500 mL sensor cleaner/Q tips and Pipe cleaners</i> )	SER-01