



## ST-600 Series Optical Disinfectant Concentration + Temperature Sensors

### **Product Description**

The Pyxis ST-600 Series inline sensors are designed for use in qualitative measurement of real-time mass/mass concentration of a variety of disinfectants to include Chlorine content of concentrated and diluted Sodium Hypochlorite (ST-600 and ST-604), concentration of in-situ Chlorine Dioxide (CLO<sub>2</sub>) generation solution, low level concentration of Chlorine Dioxide (CLO<sub>2</sub>) in clean water (ST-605) as well as concentration of Acidified Sodium Chlorite (ASC) in clean water (ST-606), as well as high-range Chlorine concentration in clean water (ST-607). Unlike typical amperometric sensors for disinfection products the ST-600 Series directly measure the optical density of the solution as either a percentage (% mass/mass) or ppm (mg/L) levels without dilution using a UV light source. The ST-600 Series sensors 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 when used in clean (city water quality) carrier water applications. These sensors are factory calibrated using ultra-pure solutions of Sodium Hypochlorite, Chlorine Dioxide and Acidified Sodium Chlorite by Pyxis Lab Inc.

These sensors feature an expanded detection range and an RTD temperature compensated output signal, allowing the user to measure higher temperature compensated concentrations of Sodium Hypochlorite, CLO<sub>2</sub> and ASC 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.

### **\*NOTE\***

*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.*

## Typical Applications

- Monochloramine Generation Precursor or Industrial Hypochlorite (ST-600)
- Chlorine Dioxide Generation (ST-601)
- Hypochlorite through Electrolysis Generation (ST-604)
- Low Range (ppm) Chlorine Dioxide Applications for Clean Water (ST-605)
- High Range (ppm) Chlorine Applications for Clean Water (ST-607)
- Acidified Sodium Chlorite Applications for Clean Water (ST-606)
- Animal Care / Food Processing / Pulp & Paper / Secondary Disinfection

## Features

- Break-through Technology measures disinfection liquids from low to high concentrations.
- Direct-Read technology without dilution or reagent.
- Long maintenance & calibration cycle - 6 Months Trial.
- Convenient 3/4" NPT Tee Installation (ST-001) for High Flow Applications.
- Convenient 1/4" Teflon Tubing Installation for Low Flow Applications.
- Probe Cleanliness Diagnostics via uPyxis 2.0 app.
- Expanded Concentration Range.
- Temperature Compensation (RTD) of Oxidant Concentration & Temperature Output Signal.

## Sensor Cleaning & Calibration

The uPyxis 2.0 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 2.0 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 2.0 APP all from the touch of their smart device. The uPyxis 2.0 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 [www.pyxis-lab.com/upyxis](http://www.pyxis-lab.com/upyxis). For wireless access to all Pyxis devices via uPyxis, users will require the inline MA-WB Bluetooth-USB Adapter (P/N: MA-WB) or POWERPack Series Auxiliary Box. Details can be found in the Order Information section of this Data Sheet.

Contact [service@pyxis-lab.com](mailto:service@pyxis-lab.com) for support.



## Sensor Specifications

Item	ST-600	ST-601	ST-604	ST-605	ST-606	ST-607
Part Number	50231	50231	50233	54148	59433	50670
Target Disinfectant	Chlorine	Chlorine Dioxide	Chlorine	CLO2 Low Range	Acidified NaClO2	Chlorine
Target Carrier Measured	Industrial Bleach	Generator Solution	Electrolysis	Clean Water	Clean Water	Clean Water
Unit of Measure	% Mass/Mass	% Mass/Mass	% Mass/Mass	ppm	ppm	ppm
Concentration Output	0.0–16.0%	0.0–0.35%	0.0–2.00%	0.0–100ppm	0.0–1,200ppm	0–400ppm
Lower Detection Limit	0.05%	0.01%	0.01%	0.5ppm	2.0ppm	1.0ppm
Resolution	0.001 in Percentage / 0.1 in ppm					
Accuracy	Two-Point Calibration against User Created Standard Solutions					
Temp. Output Range	4mA 0–32 °F; 20mA 100–212 °F					
Method	UV Absorbance					
Power Supply	22–26VDC, 2W					
Outputs	Isolated (2) 4–20mA Analog; RS-485 Modbus					
Dimension	6.8in L x 1.44in D					
Weight	0.37lbs					
Wet Material	UPVC; Quartz					
Operating Pressure	Up to 100psi (6.9Bar)					
Temp. Limitations	4–49 °C (40–120 °F)					
Installation Formats	1/4" OD (6.4mm) Teflon Tubing passed through Sensor Optical Channel; ST-001 3/4" UPVC Tee					
Cables Included	5ft/1.5m Bulkhead with IP67 Adapter; 5ft/1.5m Flying Lead with IP67 Adapter					
Rating	IP67					
Regulation	CE / RoHS / UKCA					

### \*NOTE\*

The ST-600 Series sensors are manufactured with an optical channel composed of titanium compression installed quartz tubing with ¼-inch Inner Diameter. This optical channel quartz 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-inch OD Clear Teflon Tubing Installation is recommended. This method eliminates chemicals from touching the optical channel.

### Optional Accessories Information

MA-WB Bluetooth Adapter

### Part Number

MA-WB

PowerPACK-1 Single Channel Bluetooth/Power Auxiliary Box

MA-BLE-1

Probe Cleaning Kit

SER-01

ST-001 Inline Tee System

50704

VIT-KIT O-Ring Replacement Kit for ST-001 Bleach Compatible

VIT-KIT

ST-002 Tee System Plug

50719

SP-210 Handheld Meter for %Chlorine in Bleach Concentration

50801