Pyxis

ST-500 Series

PTSA Inline Sensor

For Industrial Cooling & Membrane Water Applications

Description

The ST-500 Series inline sensor platform is a proprietary design for the direct measurement of PTSA (Pyrenetetrasulfonic Acid, CAS# 59572-10-0) utilizing LED UV light sources (365nm ex/ 410nm em) for use in industrial cooling water and process treatment applications.

The ST-500 Series offers Pyxis proprietary algorithms to determine the concentrations of PTSA while measuring sample turbidity and color in highly contaminated waters (ie. $\leq$150 NTU and 10 ppm Fe) for internal compensation. The ST-500 Series offers a combination of 4-20mA as well as RS-485 Modbus output signals and is Bluetooth Enabled for wireless cleanliness diagnostics and calibration when used with MA-WB or PowerPACK Series Bluetooth Adapters and the uPyxis APP for Mobile or Desktop devices. The ST-500 Series is provided in CPVC with the standard Pyxis ST-001 inline ¾" FNPT Tee assembly, 5-foot bulk-head cable with quick adapter and 1.5ft flying lead cable with quick adapter, enabling rapid wiring to any microprocessor controller, PLC or DCS system. The ST-500SS is offered in 304L Stainless Steel with ¾" FNPT ports for high pressure applications.

Figure 1 - ST-500 and ST-500SS Inline PTSA Sensors

Specifications

Item	ST-500	ST-500RO	ST-500SS
P/N	50661	50669	50700
PTSA Output Scale *Set At Factory*	0-200ppb	0-40ppb	0-200ppb
PTSA Maximum Range *Adjusted via uPyxis*	0-300ppb	0-40ppb	0-300pb
PTSA Precision/Accuracy	+/- 1 ppb	+/- 0.2 ppb	+/- 1 ppb
Excitation/Emission	LED 365/410nm		
Power Supply	22 – 26V DC, Power Consumption – 1W		
Outputs	Isolated 4 – 20 mA Analog Outputs & Isolated RS-485 Digital Output -7Pin		
Installation	ST-001 Inline Tee (provided) ¾" FNPT Socket & Thread		¾" FNPT Threading
Weight	170 g (0.37lbs)		1,148 g (2.5lbs)
Operational Pressure	100 psi (6.9 Bar)		290 psi (20 Bar)
Operating Temperature	4 °C – 49 °C (40 – 120 °F)		
Storage Temperature	-20 °C – 60 °C (-4 – 140 °F)		
Material	CPVC		304 Stainless Steel
Rating	IP67, Fully Dustproof & Waterproof		
Regulation	CE Marked + RoHS		
Dimension (L x W x H)	Length 6.8 inch (172.7 mm), body diameter 1.44 Inch (36.6 mm)		
Cable Length	5 feet, terminated w/IP67 adapter + 1.5 feet flying lead w/IP67 adapters		

Optional Accessories Information   P/N

ST-001 Inline Tee Assembly Spare *(3/4" FNPT Inline Tee For ST Probes)*   50704

PTSA-100 *(PTSA Calibration Standard 100ppb / 500mL)*   21001

ST-500 Cleaning & Calibration Kit *(Contains MA-WB Adapter + PTSA-100 + Probe Cleaner)*   57013

MA-WB Bluetooth Adapter *(Pyxis Bluetooth Adapter for 7Pin Pyxis Sensors)*   MA-WB

Power*PACK-1 (Single Chanel Auxiliary Power Supply w/Bluetooth For Pyxis Sensors)*   MA-BLE-1

Power*PACK-4 (Four Chanel Auxiliary Power Supply w/Bluetooth For Pyxis Sensors)*   MA-BLE-4

MA-NEB Bluetooth/USB Adapter *(Enables Bluetooth for Desktop and uPyxis APP)*   MA-NEB

Pyxis ST/LT Series Sensor Cleaning Kit *(Includes Sensor Cleaner 500mL + Accessories)*   SER-02

SP-350 Handheld PTSA Fluorometer *(PTSA 0-300ppb)*   50206

MA-10CR *(10' Extension Cable for 8Pin Pyxis Sensors)*   50741

MA-50CR *(50' Extension Cable for 8Pin Pyxis Sensors)*   50743
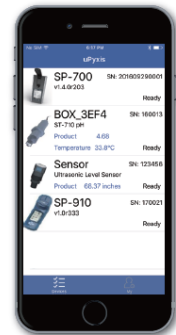
Cleaning and Calibration

Pyxis Lab recommends cleaning and calibrating the ST-500 Series inline sensors at a minimum frequency of once per month. For clean water applications this period may be increased. For heavily contaminated applications, diagnosis, cleaning and calibration may be considered more frequently. The ST-500 Series sensor contains internal hardware and algorithms that enable compensation of color and turbidity as well as sensor cleanliness diagnostics. When powered by and connected to the MA-WB (7Pin) or PowerPACK Series Bluetooth Adapter options, the ST-500 Series sensor can both be wirelessly accessed via Bluetooth from any mobile or desktop device using the **uPyxis APP**. The APP features a live graphical display of the sensors value outputs for PTSA as well as a sensor cleanliness check and calibration function. The cleanliness check can be conducted rapidly to determine if a cleaning is required prior to sensor calibration. Once the sensor is properly cleaned it can be re-diagnosed to confirm the cleaning was effective and then calibrated with its Pyxis Calibration Standard *(ie. PTSA-100)*. Contact service@pyxis-lab.com for support.

Instructional videos on this and other Pyxis devices can be found at

▶ YouTube   https://www.youtube.com/channel/UC8RqYgnwL-Vzu2TRzraqrUw

Calibration and diagnostics made easy with the **uPyxis** APP