Pyxis®

www.pyxis-lab.com

USER MANUAL

ST-766SS SERIES OXILOGIC

Multi-Parameter Smart Sensors for Drinking, Domestic, Industrial & Process Water

OXILOGIC

order@pyxis-lab.com

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Warranty Information

Confidentiality

The information contained in this manual may be confidential and proprietary and is the property of Pyxis Lab, Inc. Information disclosed herein shall not be used to manufacture, construct, or otherwise reproduce the goods described. Information disclosed herein shall not be disclosed to others or made public in any manner without the express written consent of Pyxis Lab, Inc.

Standard Limited Warranty

Pyxis Lab warrants its products for defects in materials and workmanship. Pyxis Lab will, at its option, repair or replace instrument components that prove to be defective with new or remanufactured components (i.e., equivalent to new). The warranty set forth is exclusive and no other warranty, whether written or oral, is expressed or implied.

Warranty Term

The Pyxis warranty term for the ST-766SS Series sensor body is thirteen (13) months from original shipment from Pyxis. The Pyxis warranty term for the EH-766-01 (electrode reference head) installed on the ST-766SS Series sensor body is six (6) months from original shipment from Pyxis. In no event shall the standard limited warranty coverage extend beyond this timeline from original shipment date.

Warranty Service

Damaged or dysfunctional instruments may be returned to Pyxis for repair or replacement. In some in- stances, replacement instruments may be available for short duration loan or lease.

Pyxis warrants that any labor services provided shall conform to the reasonable standards of technical competency and performance effective at the time of delivery. All service interventions are to be reviewed and authorized as correct and complete at the completion of the service by a customer representative or designate. Pyxis warrants these services for 30 days after the authorization and will correct any qualifying deficiency in labor provided that the labor service deficiency is exactly related to the originating event. No other remedy, other than the provision of labor services, may be applicable.

Repair components (parts and materials), but not consumables, provided during a repair, or purchased individually, are warranted for 90 days ex-works for materials and workmanship. In no event will the incorporation of a warranted repair component into an instrument extend the whole instrument's warranty beyond its original term.

Warranty Shipping

A Repair material Authorization (RMA) Number must be obtained from Pyxis Technical Support before any product can be returned to the factory. Pyxis will pay freight charges to ship replacement or repaired products to the customer. The customer shall pay freight charges for returning products to Pyxis. Any product returned to the factory without an RA number will be returned to the customer. To receive an RMA you can generate a request on our website at Request Return or Repair - Pyxis Lab, Inc. (pyxis-lab.com)

Pyxis Technical Support

Contact Pyxis Technical Support at +1 (866) 203-8397 ext 2, service@pyxis-lab.com

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1 Introducing the Pyxis ST-766SS Series Sensors

Description

The Pyxis ST-766SS series are multi-parameter sensors designed for continuous measurement of various oxidizing species and reducing species in water treatment applications.

Each model is identified by its product name **ST-766SS** followed by a suffix indicating its target analyte, these include the following:

-**FCL** (Free Chlorine)	-**TCL** (Total Chlorine)	-**CLO** (Chlorine Dioxide)
-**Br** (Bromine)	-**NCL** (Monochloramine)	-**PAA** (Peracetic Acid)
-**H2O2** (Hydrogen Peroxide)	-**SO3** (Sulfite)	-**O3** (Ozone)

-**DBNPA** (2-2dibromo-3-nitrilopropionamide)

Two specialty combination models are also available including:

-**TFCL** (simultaneous Free and Total Chlorine) - **DCL** (Simultaneous Free Chlorine and Sulfite)

All models incorporate additional measurements of pH, ORP, Conductivity, and Temperature for comprehensive process monitoring. Among these, pH and temperature are automatically utilized for oxidizer concentration compensation, while ORP serves as a direct indicator of whether the water environment is in an oxidizing or reducing state. Conductivity is included as an auxiliary parameter, eliminating the need for a separate conductivity sensor.

The ST-766SS series sensor offers a replaceable, front loading reference electrode assembly that has been independently developed by Pyxis Lab eliminating the shortcomings associated with membranes and gel replacement while offering reduced polarization time on startup with an electrode life span potential of up to 2-years. The flat front-end design of the ST-766SS makes this platform less prone to contamination or fouling and is easy to clean. The ST-766S sensor body is composed of 316 stainless steel and is well suited for aggressive environments.

All sensors support 2x 4-20mA and RS-485 Modbus outputs and is Bluetooth 5.0 enabled when used in conjunction with the MA-CR Bluetooth Adapter or PowerPACK Series Adapters.

For installation, the sensors can be mounted in clean-water applications using the FR-50 or ST-007/ST-009 inline tee assembly, or in dirty-water applications using the FR-306-PLUS self-brushing flow assembly.

Figure 1 ST-766 Series

1.1 Specifications

1.1.1 FCL / CLO / TCL / NCL / TFCL Versions of ST-766

Specifications are subject to change without notice. Contact Pyxis (service@pyxis-lab.com) for an updated specification list

Table 1

Sensor Model	ST-766SS-FCL	ST-766SS-CLO	ST-766SS-TCL	ST-766SS-NCL	ST-766SS-TFCL
P/N	51154	55821	51379	54731	55659
Sensor Body material	SS316L				
Electrode Head Type	EH-766				EH-766-01
Oxidizer Measured	Free Chlorine	Chlorine Dioxide	Total Chlorine	Monochloramine	Free Chlorine + Total Chlorine
Oxidizer Range	0.00-5.00 ppm				
Oxidizer Precision	± 0.01mg/L or ± 1% /pH compensation up to 9.0				
pH Range	0.00 -14.00				
pH Precision	± 0.01 pH				
ORP Range	-1,500 – +1,500 mV				
ORP Precision	±1.0 mV ORP				
Conductivity Range	0-10,000µS/cm				
Conductivity Precision	±5% of value				
Measurement Interval	Continuous				
Sensor Response Time	T95≤240s – Oxidant / T95≤5s – pH-ORP-Conductivity				
Sample Operating Temperature	4 – 49°C (40 – 120°F)				
Sample Inlet Operating Pressur	7.25 –87 psi (0.05 – 0.6Mpa)				
Power Supply	22 – 26V DC, Power Consumption – 2W				
Rating	IP-67				
Compliance	EPA 334.0 / ISO 7393				
Regulation	CE marked / RoHS / UKCA				
Selectivity	Non-Selective, cross sensitive to other oxidizing species				
Warranty	6 Months Electrode / 13 Months Sensor Body				
Typical Electrode Service Life	2 years				
Cables Included	MA-1.5CR (1.5-meter Flying Lead Cable with 8Pin Male Adapter) MA-4.9CR (1.5-meter Bulkhead Cable with 8Pin Male/Female Adapters)				

1.1.2 O3 / Br / PAA / H2O2 Versions of ST-766

Table 2

Sensor Model	ST-766SS-O3	ST-766SS-Br	ST-766SS- H2O2	ST-766SS-PAA
P/N	54828	52743	53302	54803
Sensor Body material	SS316L			
Electrode Head Type	EH-766			EH-766-01
Oxidizer Measured	Ozone	Bromine	Hydrogen Peroxide	Peroxyacetic Acid
Oxidizer Range	0.00-2.00 ppm	0.00-5.00 ppm	0.00-200.00 ppm	0.00-100.00 ppm
Oxidizer Precision	± 0.01mg/L or ±1% /pH compensation up to 9.0		± 0.5mg/L or ± 1% /pH compensation up to 9.0	± 0.5mg/L or ± 1% /pH compensation up to 9.0
pH Range	0.00 -14.00			
pH Precision	± 0.01 pH			
ORP Range	-1,500 – +1,500 mV			
ORP Precision	±1.0 mV ORP			
Conductivity Range	0-10,000µS/cm			
Conductivity Precision	±5% of value			
Measurement Interval	Continuous			
Sensor Response Time	T95≤240s – Oxidant / T95≤5s – pH-ORP-Conductivity			
Sample Operating Temperatur	4 – 49°C (40 – 120°F)			
Sample Inlet Operating Pressur	7.25 –87 psi (0.05 – 0.6Mpa)			
Power Supply	22 – 26V DC, Power Consumption – 2W			
Rating	IP-67			
Regulation	CE marked / RoHS / UKCA			
Selectivity	Non-Selective, cross sensitive to other oxidizing species			
Warranty	6 Months Electrode / 13 Months Sensor Body			
Typical Electrode Service Life	2 years			
Cables Included	MA-1.5CR (1.5-meter Flying Lead Cable with 8Pin Male Adapter) MA-4.9CR (1.5-meter Bulkhead Cable with 8Pin Male/Female Adapters)			

1.1.3 SO3 / DCL Versions of ST-766

Table 3

Sensor Model	ST-766SS-SO3	ST-766SS-DCL
P/N	58305	57300
Sensor Body material	SS316L	
Electrode Head Type	EH-766	EH-766-01
Target Measured	Sulfite	Free chlorine + Sulfite
Free chlorine Range	Not measured	0-5 ppm
Free chlorine Precision	Not measured	± 0.01mg/L or 1% /pH compensation up to 9.0
Sulfite Range	0-100 ppm	
Sulfite Precision	± 0.5mg/L or ± 1% /pH compensation up to 9.0	
pH Range	0.00 -14.00	
pH Precision	± 0.01 pH	
ORP Range	-1,500 – +1,500 mV	
ORP Precision	±1.0 mV ORP	
Conductivity Range	0-10,000µS/cm	
Conductivity Precision	±5% of value	
Measurement Interval	Continuous	
Sensor Response Time	T95≤240s Sulfite or Free chlorine/ T95≤5s –pH -ORP-Conductivity	
Sample Operating Temperature	4 – 49°C (40 – 120°F)	
Sample Inlet Operating Pressure	7.25 –87 psi (0.05 – 0.6Mpa)	
Power Supply	22 – 26V DC, Power Consumption – 2W	
Rating	IP-67	
Regulation	CE marked / RoHS / UKCA	
Selectivity	Non-Selective / Cross Sensitive to other Reducing Species	
Warranty	6 Months Electrode / 13 Months Sensor Body	
Typical Electrode Service Life	2 years	
Cables Included	MA-1.5CR (1.5-meter Flying Lead Cable with 8Pin Male Adapter) MA-4.9CR (1.5-meter Bulkhead Cable with 8Pin Male/Female Adapters)	

1.1.4 DBNPA Version of ST-766

Table 4

Sensor Model	ST-766SS-DBNPA
P/N	58305
Sensor Body material	SS316L
Target Measured	DBNPA (2-2dibromo-3-nitrilopropionamide)
Electrode Head Type	EH-766
DBNPA Range	0-20 ppm
DBNPA Precision	± 0.05mg/L or 1% /pH compensation up to 9.0
pH Range	0.00 -14.00
pH Precision	± 0.01 pH
ORP Range	-1,500 – +1,500 mV
ORP Precision	±1.0 mV ORP
Conductivity Range	0-10,000µS/cm
Conductivity Precision	±5% of value
Measurement Interval	Continuous
Sensor Response Time	T95≤240s DBNPA / T95≤5s –pH -ORP-Conductivity
Sample Operating Temperature	4 – 49°C (40 – 120°F)
Sample Inlet Operating Pressure	7.25 –87 psi (0.05 – 0.6Mpa)
Power Supply	22 – 26V DC, Power Consumption – 2W
Rating	IP-67
Regulation	CE marked / RoHS / UKCA
Warranty	6 Months Electrode / 13 Months Sensor Body
Typical Electrode Service Life	2 years
Cables Included	MA-1.5CR (1.5-meter Flying Lead Cable with 8Pin Male Adapter) MA-4.9CR (1.5-meter Bulkhead Cable with 8Pin Male/Female Adapters)

1.1.5 Inline Tee or Flow Reservoirs Specifications

Table 5

ST-007 INLINE TEE or FR-50 RESERVOIR for CLEAN WATER APPLICATIONS *(Sold Separately)*			
Item	ST-007	ST-009	FR-50
P/N	50700-A51	22624	50700-A01
Sample Pressure	7.25 – 30 psi (0.05 – 0.2MPa) / Outlet to Atmosphere-Drain		
Installation	ST-007 & ST-009 Stainless Inline Tee Assemblies Rotameter NOT Included		FR-50 Self-Regulating Flow Reservoir w/Rotameter & PRV – Included
Suggested Flow Rate	200 -400 mL/minute		600-1,800 mL/min
Sample Line Size	¼ - inch OD Compression	¾ - inch FNPT	¼ -inch OD Inlet 20mm Outlet & Overflow ½ - inch NPT Drain

NOTE *ST-007, ST-009 and FR-50 are purchased separately and should be installed downstream of a Rotameter for* ***CLEAN-WATER APPLICATIONS*** *only. Contact Pyxis Lab for detailed guidelines.*

Table 6

FR-306-PLUS Self-Brushing Flow Reservoir for DIRTY Water Applications *(Sold Separately)*	
Item	FR-306 PLUS
P/N	24236
Description	Self-Brushing Single Flow-Reservoir Assembly for Pyxis Sensors
Supply Voltage	24VDC
Power Consumption	1W (typical during normal operation) Max: 20 W (locked-rotor condition, sustained up to 5 seconds and trigger alarm
Control Methodology	RS-485 or Powered Relay (24V DC)
Dimension (L x W x H)	Length 9.25-inch (235 mm), Body Square 3.15-inch (80 mm)
Body Material	UPVC & PC
Sample Inlet Pressure	7.25 – 60 psi (0.05 – 0.41Mpa)
Sample Inlet/Outlet	½-inch NPT
Detergent Injection Port	¼-inch NPT
Suggested Sample Flow Rate	200 – 800 mL/min *(Consistent Flow Rate Required Up to 3,000mL/min acceptable)*
FR-306-PLUS Rotational Speed	200 RPM – Motorized Brush
Wet Material	UPVC & PC & ABS & 316 Stainless Steel
Cable Interface	Explosion-Proof male 7-Pin Adapter
Typical FR-306-PLUS Brush Life	12-18 months depending on application of use
Cables Included	CE-FE-4.9 (1.5-meter Flying Lead 7-Pin Waterproof Cable w/ Male Adapter) CE-MS-FE-2.0 (0.6-meter Cable 7-Pin Adapter for PowerPACK Connection)

NOTE *FR-306-PLUS is purchased separately and IS REQUIRED for use in* ***DIRTY / INDUSTRIAL*** *and may be used for* ***CLEAN WATER APPLICATIONS.*** *Contact Pyxis Lab for detailed guidelines.*

1.2 Unpacking the Pyxis ST-766SS

Remove the instrument and accessories from the shipping container and inspect each item for any damage that may have occurred during shipping. Verify that all items listed on the packing slip are included. If any items are missing or damaged, please contact Pyxis Customer Service at service@pyxis-lab.com

1.3 Standard Accessories

- One ST-766SS Series Sensor (model as ordered)
- One MA.4.9CR – (Standard Cable Male-Female 8-Pin Adapters – 4.9ft/1.5m)
- One MA-1.5CR – (Flying Lead Cable Female/Flying Lead 8-Pin Adapter – 4.9ft/1.5)
- The full instrument manual is available for download at www.pyxis-lab.com/support.html http://www.pyxis-lab.com/support.html

1.4 Optional & Replacement Accessories

The following optional accessories can be purchased via your Regional Sales contact or Pyxis Customer Service at order@pyxis-lab.com.

Table 7

Accessory Name	Item number
ST-766SS-FCL *(Inline Free Chlorine/pH/TEMP/Conductivity Sensor 316L Stainless Steel)*	51154
ST-766SS-CLO *(Inline Chlorine Dioxide/pH/TEMP/Conductivity Sensor 316L Stainless Steel)*	55821
ST-766SS-TCL *(Inline Total Chlorine/pH/TEMP/Conductivity Sensor 316L Stainless Steel)*	51379
ST-766SS-NCL *(Inline Monochloramine /pH/TEMP/Conductivity Sensor 316L Stainless Steel)*	54731
ST-766SS-O3 *(Inline Ozone /pH/TEMP/Conductivity Sensor 316L Stainless Steel)*	54828
ST-766SS-SO3 *(Inline Sulfite /pH/TEMP/Conductivity Sensor 316L Stainless Steel)*	58305
ST-766SS-Br *(Inline Bromine /pH/TEMP/Conductivity Sensor 316L Stainless Steel*	52743
ST-766SS-PAA *(Inline Peroxyacetic acid/pH/TEMP/Conductivity Sensor 316L Stainless Steel)*	54803
ST-766SS-H_2O_2 *(Inline Hydrogen peroxide/pH/TEMP/Conductivity Sensor 316L Stainless Steel)*	53302
ST-766SS-DBNPA *(Inline DBNPA/pH/TEMP/Conductivity Sensor 316L Stainless Steel)*	50484
ST-766SS-TFCL *(Inline Free + Total Chlorine/pH/TEMP/Conductivity Sensor 316L Stainless Steel)*	55659
ST-766SS-DCL *(Inline Free Chlorine + Sulfite /pH/TEMP/Conductivity Sensor 316L Stainless Steel)*	57300
EH-766 *(Replacement Electrode Head for ST-766SS FCL / CLO / TCL / Br / H2O2 / DBNPA / O3 / SO3 / NCL Sensors)*	22093
EH-766-01 *(Replacement Electrode Head for ST-766SS-DCL / ST-766-TFCL / ST-766SS-PAA)*	22277

1.4 Optional & Replacement Accessories *(Continued)*

Table 8

Accessory Name	Item number
ST-007 *(Inline Stainless Steel Tee Assembly for use with CLEAN WATER ONLY, ¼-inch inlet/outlet)*	50700-A51
ST-009 *(Inline Stainless Steel Tee Assembly for use with CLEAN WATER ONLY, ¾ -inch inlet/outlet)*	22624
FR-50 *(Flow Reservoir Kit with Rotameter & PRV for use with CLEAN WATER ONLY)*	50700-A01
HALL EFFECT FLOW METER *(Inline ¼-inch Hall Effect Flow Meter for sensor water sample flow measurement in CLEAN WATER ONLY)*	16008
FR-306-PLUS *(Replacement FR-306-PLUS Auto-Brushing Flow Assembly Replacement)*	23504
FRP-306-01 *(Replacement Brush Assembly Kit for FR-306-PLUS)*	20802
FRP-300-03 *(Brush Extraction Tool)*	23504
MA-AC-7US *(110VAC Power Supply Adapter for FR-306-PLUS with USA Plug)*	26398
MA-AC-7EU *(230VAC Power Supply Adapter for FR-306-PLUS with EU/DIN Plug)*	28787
MA-AC-7UK *(230VAC Power Supply Adapter for FR-306-PLUS with UK Plug)*	25802
NANO-FLOW *(Ultrasonic Flow Measurement & Regulating Module for Clean or Dirty Water)*	21329
REPLACEMENT MICRO-ROTAMETER FOR ST-007/ ST-009/ FR-50 *(Adjustable Micro Rotameter 0 -1.8 Liter/Minute – ¼-inch OD)*	22876
MA-CR *(8Pin Bluetooth / USB Adapter for use with uPyxis APP)*	MA-CR
PowerPACK-2 *(2- Sensor Power Supply with Bluetooth / USB Adapter for use with uPyxis APP)*	MA-BLE-2
Pyxis pH Combo Calibration Pack *(pH 4-7-10 Calibration Solution 3-Pack – 500mL each)*	57007
Pyxis ORP Calibration Standard *(200mV ORP Calibration Solution – 500mL)*	57020
Pyxis Conductivity Calibration Standard *(1,000uS/cm Conductivity Calibration Solution – 500mL)*	57008
SP-200 Oxi-Pocket *(Pocket All-Oxidizing Disinfectants Colorimeter)*	50802
SP-208 Oxi-GO *(Free & Total Chlorine Colorimeter)*	63068
CL-FL Reagent *(Free DPD Chlorine Liquid Dropper Kit (30mL Bottle / 300 Tests)*	35262
CL-TL Reagent *(Total DPD Chlorine Liquid Dropper Kit (30mL Bottle / 300 Tests)*	39879

2 Dimensions

2.1 ST-766SS Series Dimensions (mm)

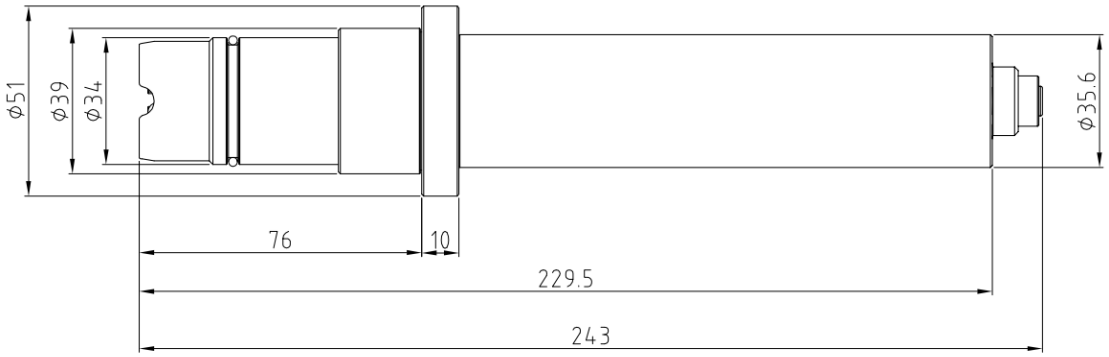


Figure 2 Dimension of the ST-766SS (mm)

2.2 FR-50 Overview

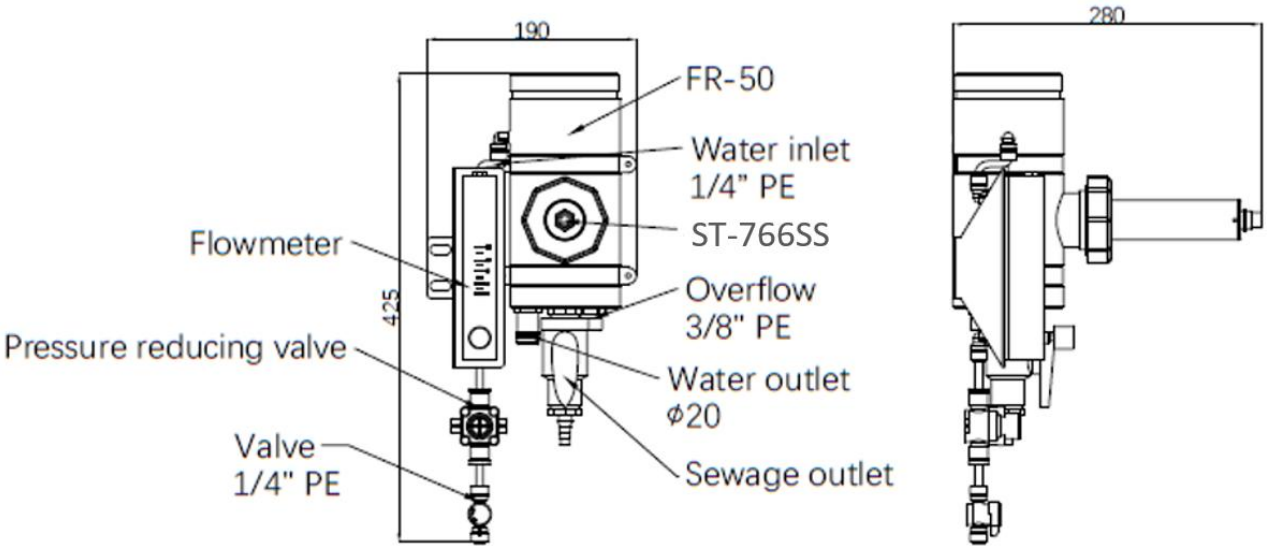


Figure 3

2.3 ST-007 Overview

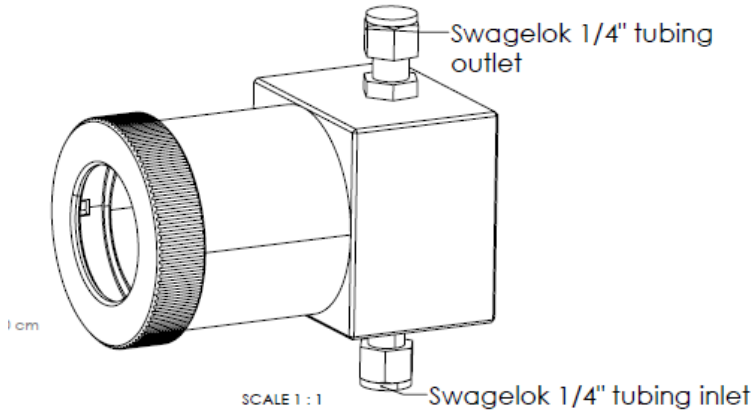


Figure 4

2.4 ST-009 Overview

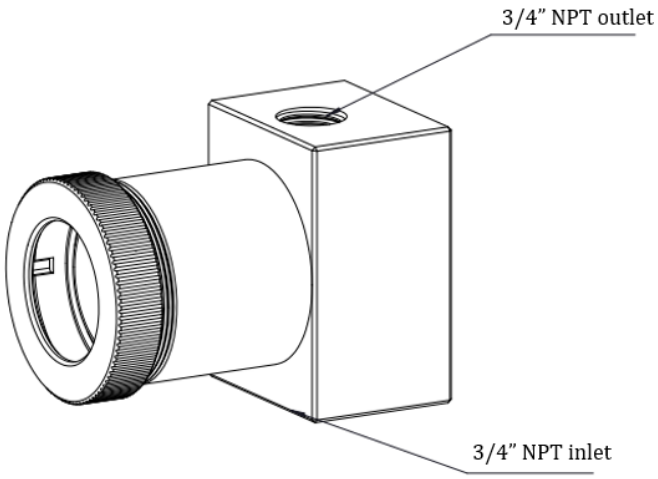


Figure 5

2.5 FR-306-PLUS Automatic Brushing Flow Reservoir Diagram

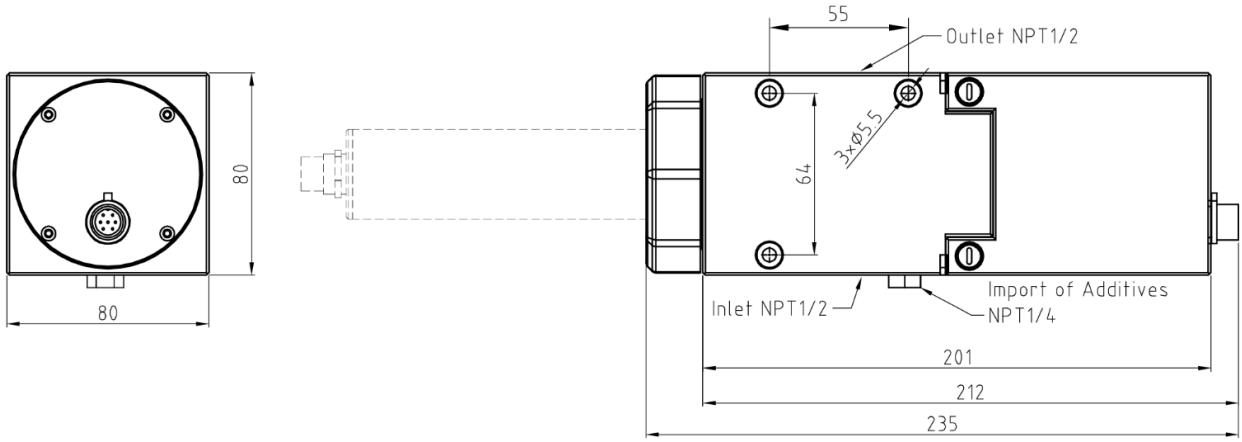


Figure 6

3 Installation

3.1 FR-50 Installation & Operation for CLEAN WATER ONLY

Application Use: The FR-50 is a unique flow reservoir specifically designed to for use with the Pyxis ST-766 series sensors only and is designed for clean water applications. The FR-50 should never be used in industrial or dirty water applications subject to suspended solids or particulate matter. The FR-50 is sold separately for use with the ST-766SS series sensor. Contact Pyxis Lab for specification guidelines of what constitutes 'clean water'.

Flow Regulation & Setting: The FR-50 will come provided with a micro-rotameter assembly and PRV that should be installed upstream of the FR-50 for ST-766 Series sensor inlet flow regulation. The ST-766 series sensor when installed in the FR-50 should be maintained at a consistent flow rate of 600-1,800mL/minute and the internal design of the FR-50 provides auto compensation of the flow by the sensor electrode when set to this range. This is critical for sensor repeatability.

Water Supply: Inlet water pressure should be from 7.25 – 30 psi (0.05-0.2Mpa) with an inlet feedwater line diameter of ¼-inch OD tubing.

Drainage: The FR-50 sample outlet and overflow line sizes are 20mm and tubing is provided with each FR-50. The outlet flow line should be diverted to drain or returned to an atmospheric tank/sump within the process itself for reuse

FR-50 Flow Reservoir Installed Downstream of Rotameter & PRV

Figure 7

3.2 ST-007/ST-009 Installation & Operation for CLEAN WATER ONLY

Application Use: The ST-007 and ST-009 are unique 316L stainless steel inline tee assemblies specifically designed to safely house Pyxis inline sensors used in clean water applications only. The ST-007/ ST-009 should never be used in industrial or dirty water applications subject to suspended solids or particulate matter. The ST-007 and ST-009 are sold separately. Contact Pyxis Lab for specification guidelines of what constitutes 'clean water'.

Flow Regulation & Setting: The ST-007/ ST-009 should be installed downstream of a user provided flow regulating device, such as a rotameter. Pyxis offers the inline Rotameter Assembly Kit (P/N 22876) for those desiring to purchase this accessory. Consistent clean water supply and flow are critical to ensure consistent sensor calibration and accuracy. The ST-007/ST-009 are ideally designed for prefiltered, pretreated makeup and feedwater (i.e. RO feedwater applications). The ST-766 series sensor when installed in the ST-007/ST-009 inline tee assembly should be maintained at a consistent flow rate. This is critical for sensor repeatability. Alternatively, users may source their own flow regulating device for use upstream of the ST-766SS series sensor.

ST-007 / ST-009 & Sensor Orientation: The ST-007/ST-009 should be positioned in a way that flow enters the bottom and exits the top. This will ensure constant sensor electrode flooding. See image below for reference.

Water Supply:
For the ST-007, the inlet feedwater line should use ¼-inch OD tubing.
For the ST-009, the inlet connection is ¾ -inch NPT female thread.

Drainage: The ST-007 outlet is ¼-inch OD tubing, while the ST-009 outlet is ¾ -inch FNPT. The outlet flow line should be diverted to drain or returned to an atmospheric tank/sump within the process itself for reuse.

ST-007 Installed with ST-766 Series Downstream of Rotameter

Figure 8

3.3 FR-306 PLUS Installation & Operation for DIRTY & CLEAN WATER

Mounting: The FR-306-PLUS must be securely mounted to a back panel through the three (3) pre-drilled screw mounting holes in the reservoir body, with the Pyxis sensor aligned in a horizontal format as seen in the figure below. ***NOTE*** *Sensor may be aligned to the left or right as desired.*

Controller/PLC Provided Power Supply & Operation Mode: The FR-306-PLUS is a stand-alone unit and requires 24VDC,20W power supply to operate. Operating 100% of the time on a system operational flow basis is the Pyxis recommended mode of operation. This can be done via the connected controller as a powered relay activating the FR-306-PLUS on a system flow switch relay or with a constant 24VDC power supply. Each FR-306-PLUS will be shipped with both a flying lead cable (CE-FE-4.9) and PowerPACK connection cable (CE-MS-FE-2.0) as a standard. Users can choose which cable they desire to use based on need.

Outlet Provided Power Supply & Operation Mode: For applications that require outlet provided power supply to the FR-306-PLUS, Pyxis offers **MA-AC-7US** (P/N 26398), **MA-AC-7EU** (P/N 28787) and **MA-AC-7UK** (P/N 25802) power supply adapters in both 110VAC-USA (Type A), 230VAC-EU (Type DIN) and 230VAC-UK formats as optional accessories. These accessories allow the FR-306-PLUS to be outlet powered and operational 100% of the time. See order information section of this document for details.

RS-485 Communication: The FR-306-PLUS offers RS-485 connectivity which allows for rotational brush speed, operation, and duration for those desiring precision control. Contact Pyxis for RS-485 details.

Inlet/Outlet Flow: The FR-306-PLUS is equipped with ½-inch FNPT threaded inlet and outlet ports. When mounted horizontally, the inlet water should enter the bottom port, and the outlet water should exit through the top port. For convenience, each FR-306-PLUS package includes two quick-connect adapters that convert ½-inch NPT threads to ⅜-inch OD tubing, as shown in the image above. The inlet water pressure should not exceed 60 psi. The outlet water should be returned to a lower pressure line, or an open sump at atmospheric pressure and prevent siphoning with valve if necessary. The range of flow through the FR-306-PLUS should be consistently regulated between 200 and 800mL/minute. An inlet rotameter or Pyxis Nano-Flow (P/N 21329) should be installed to verify and regulate inlet flow. ***NOTE*** *The FR-306-PLUS should be installed in a way to ensure the ST-766 series sensor remains flooded and wet regardless of flow condition.* Pyxis recommends the 24VDC power supply to the ST-766 series sensor be turned OFF for systems that experience extended periods of stagnant water conditions.

Calibration: Once flow has been established and stabilized, an in-situ slope calibration of the sensor should be conducted using field analysis of the sample being measured. *(i.e. DPD Free Chlorine)* See ST-766 Series Operation manual for detailed calibration instructions.

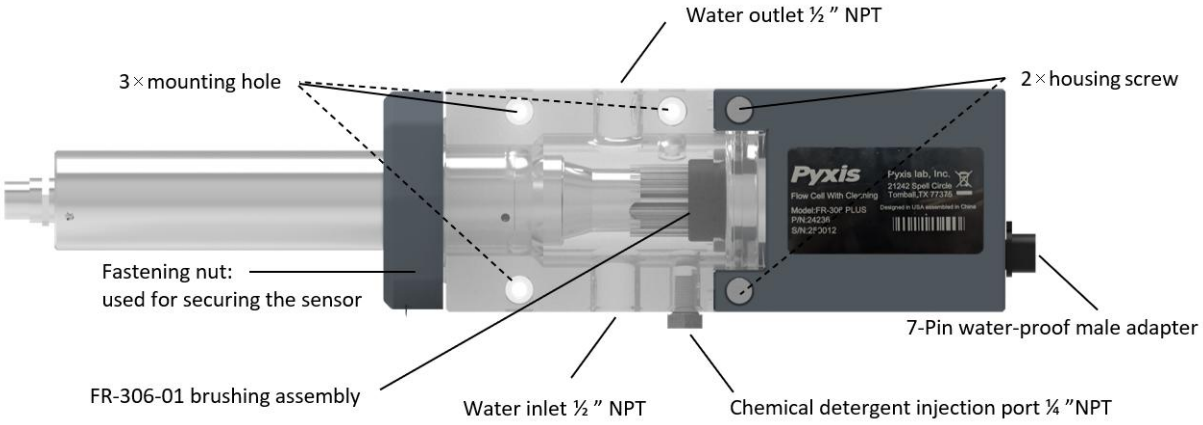


Figure 9

4 Electrical Connection

4.1 ST-766SS Series Wiring

Follow the wiring tables below to connect the ST-766SS series sensor to a controller.

IMPORTANT NOTE *Table 6 is the default wiring table applies to all ST-766SS models unless otherwise specified. ST-766SS-TFCL and ST-766SS-DCL use dedicated wiring tables, see* ***Table 7*** *and* ***Table 8****.*

All Pyxis sensors provide an active 4-20mA output signal. They should not be connected to a loop powered input. If the 24V power ground and the 4-20 mA-return in the controller are internally connected (non-isolated 4-20mA input), it is unnecessary to connect the 4-20 mA- (Gray wire) to the 4-20 mA negative terminal in the controller.

Pyxis recommends the 24VDC power supply to the ST-766 series sensor be turned OFF for systems that experience extended periods of stagnant water conditions exceeding one hour in duration. Upon sensor power-up, the ST-766 series will complete a 5-minute electrode initialization to remove any oxide layer from the gold electrode which accumulates during stagnation. The sensor will output 1mA for oxidizer/reducer during this initialization process and return to its normal reading with 4-20mA output once complete.

ST-766SS Series Default Wiring Table (Unless otherwise specified)

Table 6

Wire Color	Designation
Red	24 V +
Brown	Power Ground
Green	Shield, solution ground
Gray	4-20 mA -
White	1# 4-20 mA + for oxidant/reductant
Pink	2# 4-20 mA + for pH
Blue	RS-485 A
Yellow	RS-485 B
Black	Shield, solution ground

ST-766SS-TFCL Wiring Table

Table 7

Wire Color	Designation
Red	24 V +
Brown	Power Ground
Green	Shield, solution ground
Gray	4-20 mA -
White	1# 4-20 mA + for Total Chlorine
Pink	2# 4-20 mA + for Free chlorine
Blue	RS-485 A
Yellow	RS-485 B
Black	Shield, solution ground

ST-766SS-DCL Wiring Table

Table 8

Wire Color	Designation
Red	24 V +
Brown	Power Ground
Green	Shield, solution ground
Gray	4-20 mA -
White	1# 4-20 mA + for Free chlorine
Pink	2# 4-20 mA + for Sulfite
Blue	RS-485 A
Yellow	RS-485 B
Black	Shield, solution ground

Table 9

ST-766SS-Series Sensors 4-20mA Scaling		
Sensor Model	1#4-20mA (White Wire) Scaling	2#4-20mA (Pink Wire) Scaling
ST-766SS-FCL	Free Chlorine: 4mA = 0ppm, 20mA= 5ppm	pH: 4mA = 0, 20mA = 14
ST-766SS-CLO	Chlorine Dioxide: 4mA = 0ppm, 20mA= 5ppm	pH: 4mA = 0, 20mA = 14
ST-766SS-TCL	Total Chlorine: 4mA = 0ppm, 20mA= 5ppm	pH: 4mA = 0, 20mA = 14
ST-766SS-NCL	MonoChloramine: 4mA = 0ppm, 20mA= 5ppm	pH: 4mA = 0, 20mA = 14
ST-766SS-PAA	Peracetic Acid: 4mA = 0ppm, 20mA= 100ppm	pH: 4mA = 0, 20mA = 14
ST-766SS-H_2O_2	H_2O_2: 4mA = 0ppm, 20mA= 200ppm	pH: 4mA = 0, 20mA = 14
ST-766SS-O_3	Ozone: 4mA = 0ppm, 20mA= 2ppm	pH: 4mA = 0, 20mA = 14
ST-766SS-SO3	Sulfite: 4mA = 0ppm, 20mA= 100ppm	pH: 4mA = 0, 20mA = 14
ST-766SS-Br	Bromine: 4mA = 0ppm, 20mA= 5ppm	pH: 4mA = 0, 20mA = 14
ST-766SS-DBNPA	DBNPA: 4mA = 0ppm, 20mA= 20ppm	pH: 4mA = 0, 20mA = 14
ST-766SS-TFCL	Total Chlorine: 4mA = 0ppm, 20mA= 5ppm	Free Chlorine: 4mA = 0ppm, 20mA = 5ppm
ST-766SS-DCL	Free Chlorine: 4mA = 0ppm, 20mA= 5ppm	Sulfite: 4mA = 0ppm, 20mA = 100 ppm

NOTE *Custom factory sensor scaling is available upon order request. Contact service@pyxis-lab.com for details.*

4.2 FR-306-PLUS Wiring

Follow the wiring table below to connect the FR-306-PLUS to a controller or the Pyxis UC-50 via 24VDC and RS-485 Modbus. Alternatively, any OEM controllers capable of providing 24VDC power supply may also be used. The FR-306-PLUS may be operated 100% of the time with no issue, simply by providing the unit 24VDC power supply. Some users may also consider operating the FR-306-PLUS as desired in an ON/OFF relay format based on their application needs. Each FR-306-PLUS will be shipped with one flying lead cable (CE-FE-4.9) for direct wiring to terminal and one PowerPACK connection cable (CS-MS-FE-2.0) for direct adapter connection to Pyxis PowerPACK Series for power supply.

NOTE *– The FR-306-PLUS may also be operated via 110VAC or 230VAC outlet power supply by utilizing optional Pyxis power supply adapter cables with plug purchased separately. See the* Optional & Replacement Accessories *section of this document for details.*

Table 10

Wire Color	Designation
Red	24V power supply
Black	24V power ground
Blue	RS-485 A
Yellow	RS-485 B
Silver	PE
White	Not connected
Green	Not connected

5 Calibration and Diagnosis

The ST-766SS Series sensors are rigorously calibrated before leaving the factory. As such, users do not need to calibrate the sensor for a period of three months or up to one year if the sensor is maintained in clean condition. Users can however calibrate the sensor according to their application needs and as desired using the MA-CR Bluetooth adapter and uPyxis APP for mobile or desktop devices.

5.1 Calibration and Diagnosis by uPyxis Mobile App

Connect and power the ST-766SS sensor using the MA-CR Pyxis Bluetooth adapter (P/N: MA-CR) as shown in the following connection diagram. The power should be sourced from a 24 VDC power terminal of a controller. If a controller is not available, please purchase a 24VDC power supply.

Figure 10 MA-CR Bluetooth Adapter

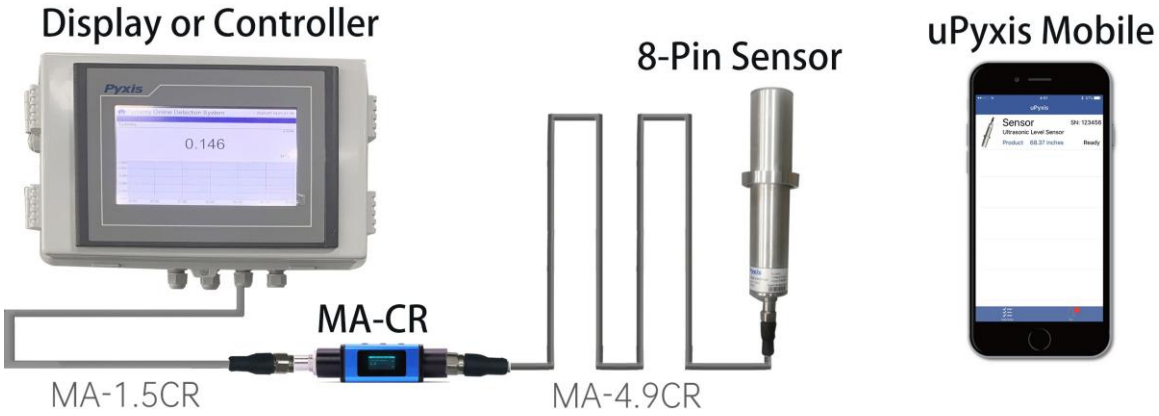
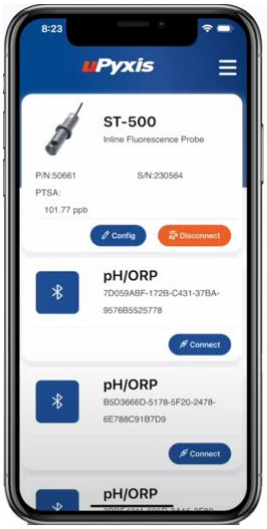


Figure 11 *Power the ST-766SS via controller with the MA-CR Bluetooth Adapter inserted between both*

5.2 Download uPyxis2.0® Mobile App



Download and install the **uPyxis2.0®** Mobile App from Apple App Store or Google Play.

5.3 Connecting to uPyxis2.0® Mobile App

Turn on Bluetooth in the smart device (please do not pair your device Bluetooth to uPyxis, the app will do the pairing). Open the uPyxis app in the device. Click Scan Bluetooth button to scan the available Pyxis Bluetooth devices. The discovered devices will be listed as shown in Figure 13

Tap the discovered ST-766SS sensor to connect to the sensor. The uPyxis app can identify the sensor type if multiple Pyxis sensors are discovered in the scan.

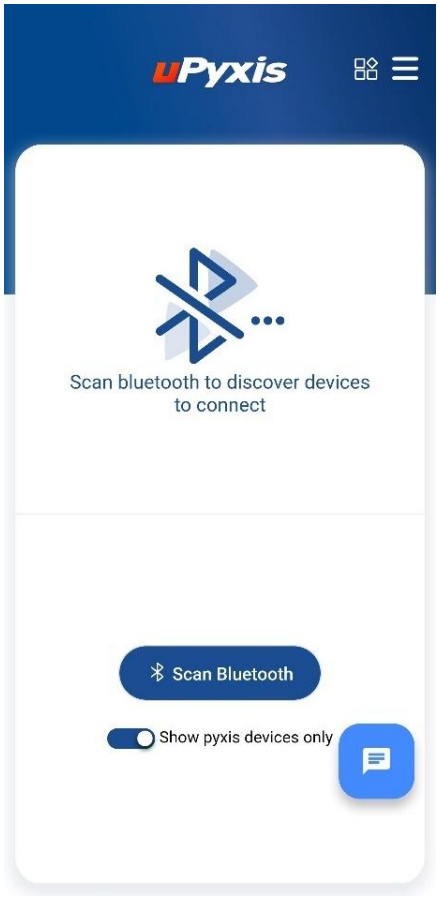


Figure 12

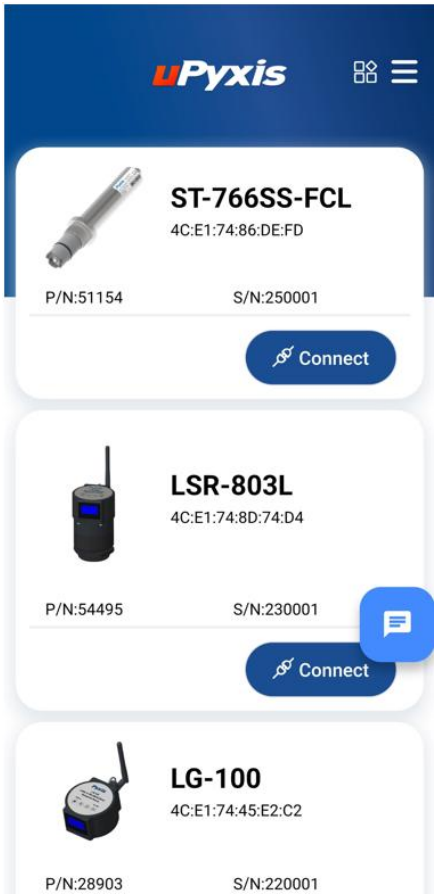


Figure 13

As shown in Figure 14, the uPyxis will default to **Trend Chart** page after connected to the sensor via the MA-CR Bluetooth adapter. The measurement value will be displayed as a line graph to show the real-time trend. Click the **Show All** button to select different measurement parameters.

Tap in the top of the app page to launch the configuration page. Six functional tabs of each are available in this page: Information, Configuration, Calibration ,4-20mA Span, Diagnosis and User Guide.

Figure 14

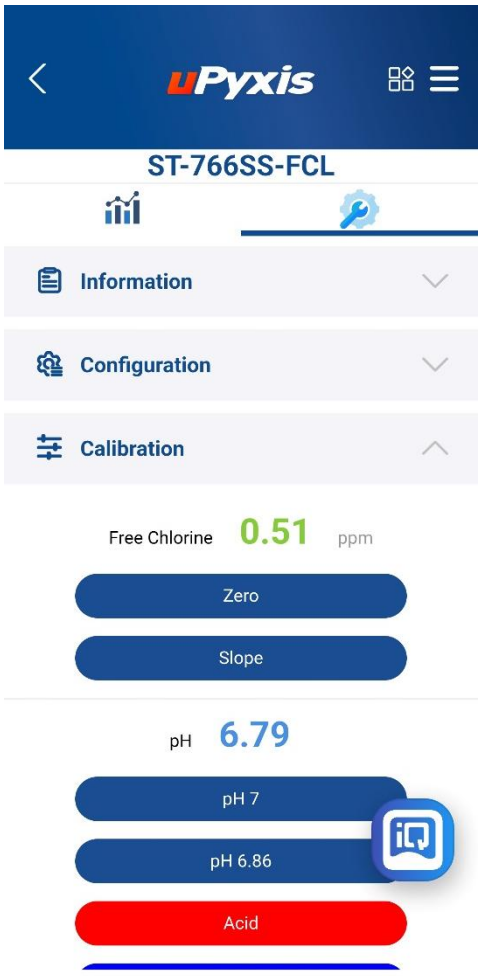


Figure 15

5.4 Smoothing Factor Description & Adjustment

Usually the oxidant concentration (e.g., free chlorine) is a very small signal, which is easily subject to external interference. The ST-766SS Series sensors adopt a continuous smoothing and averaging algorithm to filter out these minor interferences. A suitable smoothing factor setting can allow users to obtain a high-quality measurement and suitable dynamic response based on the application needs. The smoothing factor setting regulates the speed of sensors response.

The higher the smoothing factor value, the faster the sensor response and the lower the interference and noise suppression enabling a more rapid response to any changes of the real value. The lower the smoothing factor value, the slower the sensor response and the better the interference and noise suppression, but the slower the response to the real value change.

Pyxis Lab uses the term "T95" when the measured value of the sensor reaches 95% of the true value to describe the speed of the sensor response in seconds. The default smoothing factor of ST-766SS Series sensor is **0.0024 (T95≈4 minutes)**. The available setting range of the smoothing factor is 0.001 to 0.9. The following table outlines the comparison between the smoothing factor and T90 for the ST-766SS Series sensor and should be used if considering an adjustment to the smoothing factor settings.

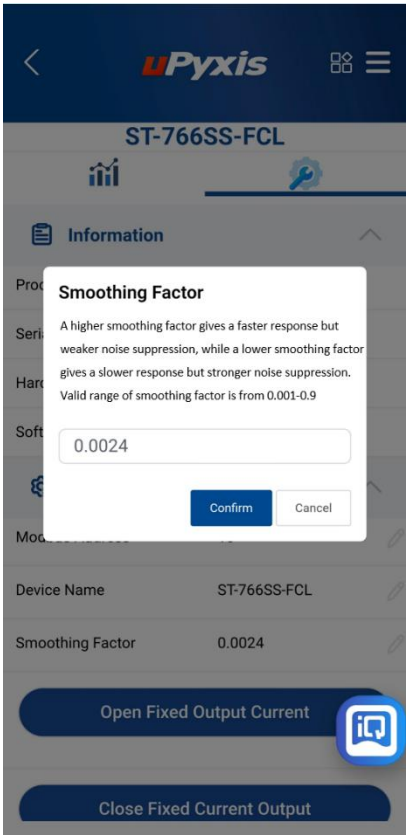


Figure 16

Smoothing Factor	T90 (Seconds)
0.1	5.5
0.09	6
0.08	7
0.07	8
0.06	9.25
0.05	11.25
0.04	14
0.03	19
0.02	28.5
0.01	57.25
0.009	63.75
0.008	71.75
0.007	82
0.006	97.5
0.005	114.75
0.004	143.5
0.003	191.5
0.002	287.5

$$T_{95} \approx 0.538 * Smooth\_factor^{-1.013}$$

5.5 Fixed 4-20mA Output Diagnostic Function

The Fixed 4–20 mA Output Diagnostic function allows users to verify whether the 4–20 mA analog outputs of the sensor and the corresponding **receiving system** (i.e. OEM Controller / PLC / DCS) are functioning properly.

Tap **Open Fixed Output Current** to start the diagnostic and enter the desired output current value (Figure 17, Figure 18). The sensor will automatically output this value on Channel 1 (white wire), while Channel 2 (pink wire) outputs 1 mA lower for easy channel distinction. For example, if the diagnostic current is set to 20 mA, Channel 1 will output 20 mA while Channel 2 output 19 mA.

The diagnostic mode runs for **10 minutes** and then stops automatically, or it can be ended manually by tapping **Close Fixed Current Output.** After closing, both channels revert to their normal measurement outputs.

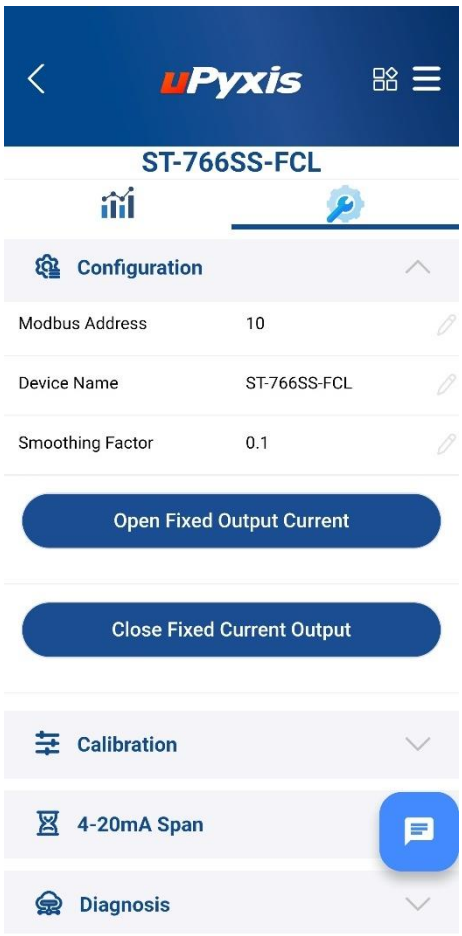


Figure 17

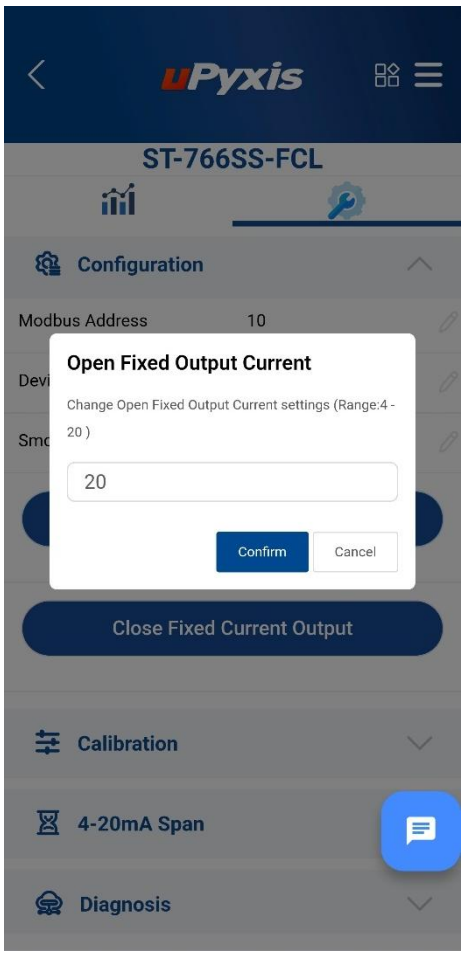


Figure 18

5.6 Oxidizer Calibration

The ST-766 series supports calibration of each oxidizer against its respective wet-chemical reference method, using either a two-point (zero and slope) or single-point slope calibration. The following table summarizes the zero and slope-calibration method used for each oxidizer.

Table 11

Target-Analyte	Zero-Calibration	Suggested Slope-Calibration Method
Free Chlorine	Pyxis Suggests No Zero Calibration Under Normal Operating Conditions – However if Zero is Required use Pyxis Zero Oxidizer Calibration Solution:(P/N:21022) , or 100us/cm conductivity standard, or simply dry and hold sensor in air	SP-200 or Equal - Free-Chlorine Method (0.02-2.2 ppm CL_2) (DPD Method)
Total Chlorine		SP-200 or Equal - Total-Chlorine Method (0.02-2.2 ppm CL_2) (DPD Method)
Chlorine Dioxide		SP-200 or Equal - Chlorine Dioxide Method (0.04-5 ppm CLO_2) (DPD Method)
Monochloramine		SP-200 or Equal - Chloramine, Mono, Low Range Method (0.1-3.0·ppm CL_2) (Indophenol Method)
Hydrogen Peroxide		SP-200 or Equal - Hydrogen Peroxide Method (25.-400.ppm·H_2O_2) (Iodimetry Method)
Peracetic Acid		SP-200 or Equal - Peroxyacetic Method (25.0-500·ppm·PAA) (Iodimetry Method)
Ozone		SP-200 or Equal - Ozone Method (0.1-2 ppm·O_3) (DPD or Other Method)
Bromine		SP-200 or Equal - Total-Bromine Method (0.04-4.5·ppm·Br2) (DPD Method)
Sulfite		SP-800/SP-910 or Equal - Sulfite – Low Range Method (0.02 – 5.00ppm – SO2) (Iodimetry Method)

Single Point Oxidizer Slope Calibration (In-Situ Calibration)

Slope-Point Calibration: Be sure the ST-766SS sensor is installed in the ST-007/ST-009/FR-50 tee or the FR-306-PLUS flow reservoir with consistent sample flow. The ST-766SS must be slope calibrated using the ST-007/FR-50 flow cell (for clean water) or the FR-300-PLUS flow reservoir (for dirty or clean water). During calibration, a **consistent** flow within the specified range must be maintained, as outlined in the **Specifications Section** of this manual.

Determine the actual concentration of the target oxidizer in the outlet sample collected from the sensor flow cell using the corresponding wet-chemical reference method listed in *Table 11*.

Once the oxidizer concentration has been determined, open the **uPyxis App** and connect to the corresponding **ST-766SS** sensor. Navigate to the **Calibration** section, tap **SLOPE**, and enter the measured concentration value in the dialog window as shown in Figure 20. Ensure the sensor reading has been stable for at least **10 minutes** before performing the calibration.

Two Point Oxidizer Calibration

IMPORTANT NOTE *Under normal operational use of the ST766SS Series sensor, Pyxis Lab **does not suggest** a Zero-Point calibration by the user and the preprogrammed factory zero should remain unaltered. Only Slope calibration is recommended as a standard practice.*

Zero-Point Calibration Procedure:

If a zero calibration is necessary, close the water inlet valve and remove the ST-766SS sensor and rinse 3x with DI water ensuring there is no debris or fouling of the sensor electrode head. Submerge the sensor into a beaker filled with Pyxis Zero Oxidizer Calibration Solution (P/N:21022) or with 100µS/cm Conductivity Standard Solution or simply hold the sensor in the air. All will work. Then tap **ZERO** in the uPyxis app. Please allow sufficient time (a few minutes) for the sensor to stabilize before performing the calibration.

Slope-Point Calibration Procedure:

After successful zero calibration, insert the ST-766SS Series sensor back into ST-007/ST-009/FR-50 tee or the FR-306-PLUS flow reservoir and reestablish sample flow. Open the sample water supply valve allowing the sensor to read and stabilize after a few minutes of observation. Determine the actual concentration of the target oxidizer in the outlet sample collected from the sensor flow cell using the corresponding wet-chemical reference method listed in *Table 11*.

Once the oxidizer concentration has been determined, open the **uPyxis App** and connect to the corresponding **ST-766SS** sensor. Navigate to the **Calibration** section, tap **SLOPE**, and enter the measured concentration value in the dialog window as shown in Figure 20. Ensure the sensor reading has been stable for at least **10 minutes** before performing the calibration.

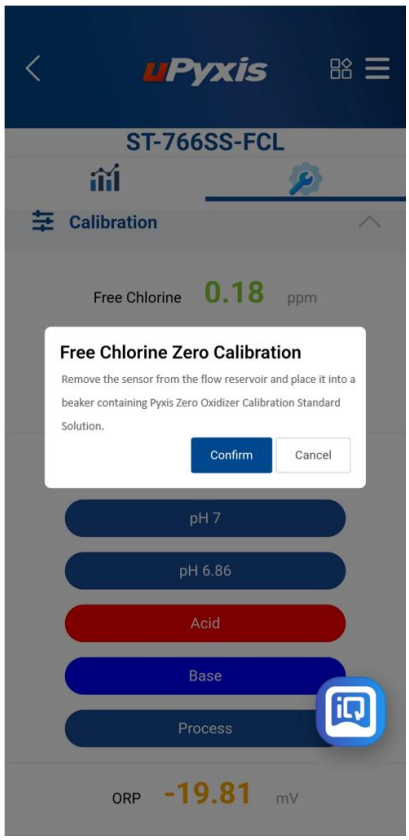


Figure 19

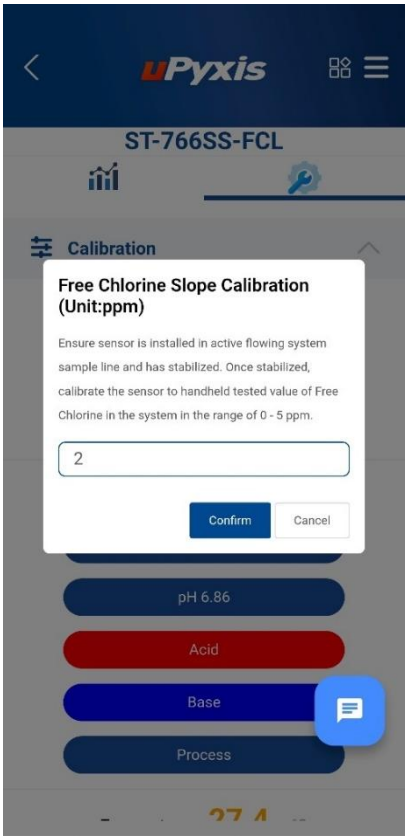


Figure 20

5.7 pH Calibration

Remove and place the sensor in a low pH (ie. 4.0) calibration standard solution and tap **pH ACID-LOW CALIBRATION** in the uPyxis app. Measure for 1 minute and wait for the measurement result to stabilize before performing calibration, the low pH calibration standard value range acceptable for this step is 1.00-6.00 pH.

Place the sensor into the pH 7.00 or pH 6.86 calibration standard solution.

- If using **pH 7.00** calibration standard, tap **pH 7** button in the uPyxis app.
- If using **pH 6.86** calibration standard, tap **pH 6.86** button in the uPyxis app.

Measure for 1 minute and wait for the measurement result to stabilize before performing calibration.

Place the sensor in a high pH (ie. 10.0) calibration standard solution and tap **pH BASE-HIGH CALIBRATION** in the uPyxis app. Measure for 1 minute and wait for the measurement result to stabilize before performing calibration, the high pH calibration standard value range acceptable for this step is 8.00-13.00 pH.

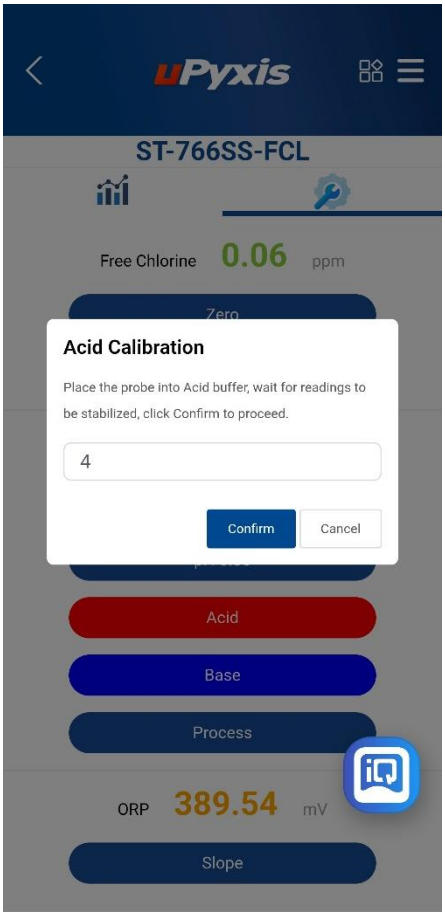


Figure 21 Enter pH concentration to start pH low calibration

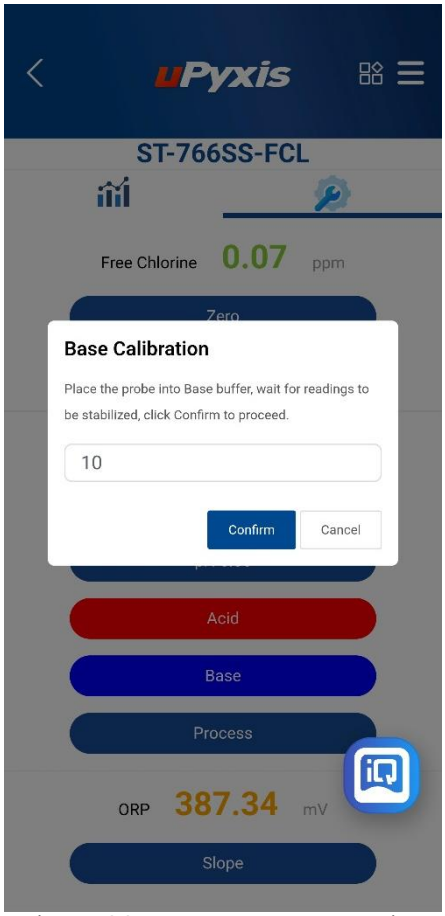


Figure 22 Enter pH concentration to start pH High calibration

5.8 pH Process Calibration

The pH process calibration is used to add an offset on the current pH reading. This function is useful when it is inconvenient for the user to remove the ST-766S series probe from the flow reservoir to perform a standard buffer calibration. Tap **Process** button to perform pH process calibration as shown in Figure 23.

Use a portable pH meter to determine the inlet pH value. Enter the target pH value to correct the measured value and generate an offset. The probe calibration result will be automatically displayed on the calibration interface.

NOTE *(1) Performing pH- Acid / pH- Mid / pH-Base will clear the offset.*
(2) Valid process calibration offset is pH - 0.9 to 0.9. e.g., if ST-766 measures pH 7.60, user does a process calibration with input pH process value 7.80, ST-766 will accept the calibration; if user does a process calibration with input pH process value 8.60, ST-766 will reject the calibration.

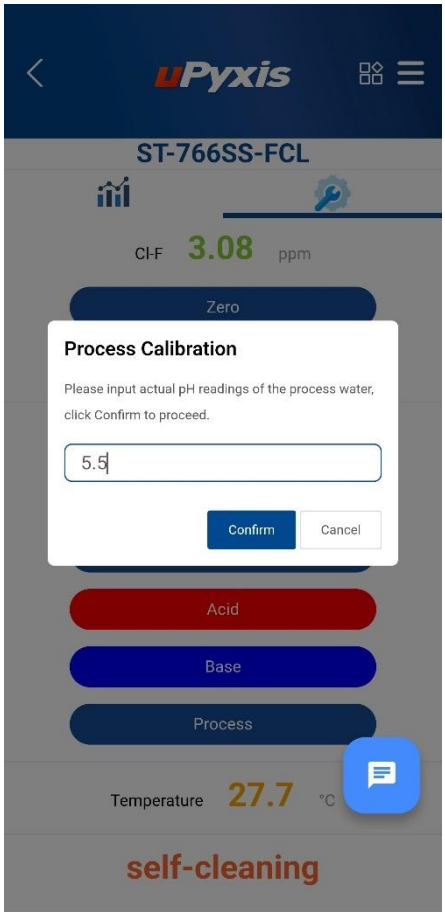


Figure 23

5.9 Conductivity Calibration

The conductivity sensor only needs to be calibrated once. Place the sensor in a standard solution with a known conductivity value — for example, the Pyxis 1,000 µS/cm Conductivity Standard (P/N 57008). Alternatively, you may use a handheld device to measure the conductivity of the on-site water sample and enter that value as the standard. Then tap **Confirm** and wait for the calibration result message to appear.

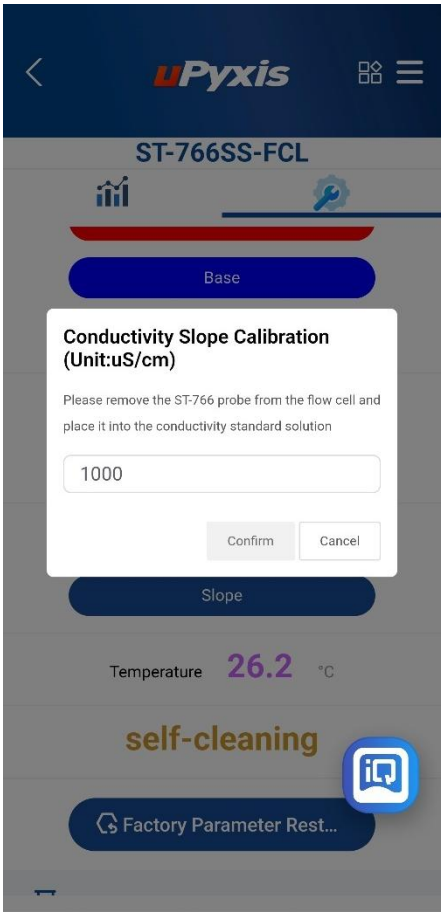


Figure 24

5.10 ORP Calibration

Close the water inlet valve and remove the ST-766SS sensor and rinse 3x with DI water ensuring there is no debris or fouling of the sensor electrode head. Submerge the sensor into a beaker filled with Pyxis ORP-200 Calibration Standard Solution (P/N: 57020) or similar. Enter the known concentration of the ORP standard solution in the calibration screen. Then tap **Confirm** and wait for the calibration result message to appear.

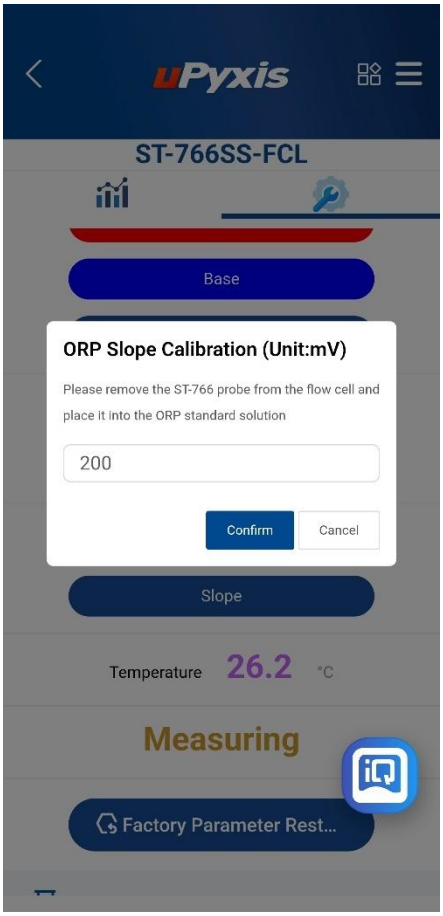


Figure 25

5.11 4-20mA Span

Refer to **Table 9** for the default 4–20 mA span settings of the ST-766SS Series probes.

Tap **4–20 mA Span** to expand the section, then tap the **pencil** icon beside the target channel to adjust the output range.

NOTE *The 4-20mA Span feature allows users to REDUCE the upper 20mA output scale only, which helps improve the resolution of the analog signal within the desired measurement range. You cannot INCREASE the upper limit of the sensor beyond the range of the sensor.*

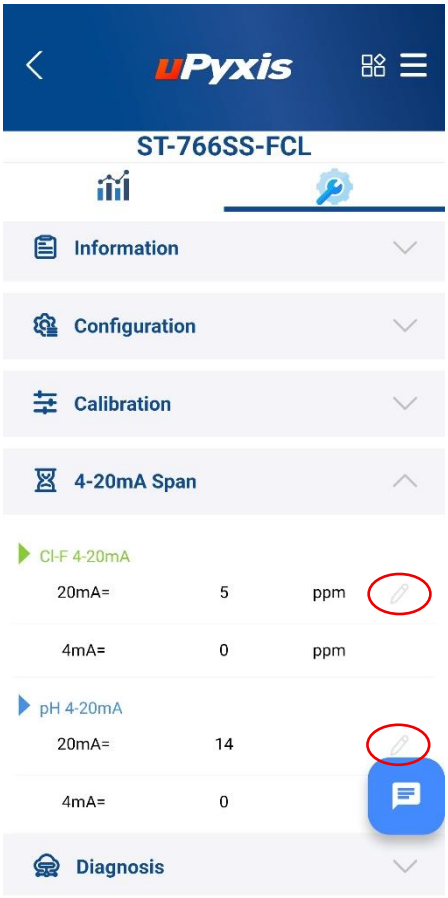


Figure 26

5.12 Diagnosis

Tap **Diagnosis** in the bottom of the app page to launch the diagnosis page, Figure 27.

In this page, the raw data measured by the sensor is displayed. To help troubleshooting possible issues with the sensor, please save images of these data when the sensor is respectively placed in a clean water (tap water or deionized water), in a pH standard solution or **the actual sample** that the sensor is intended to measure. This data may be exported from the uPyxis APP via email to service@pyxis-lab.com for technical support.

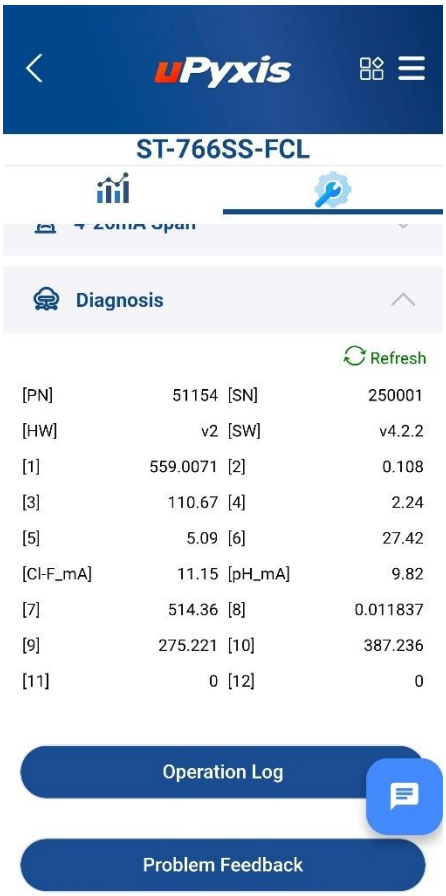


Figure 27

6 Modbus RTU

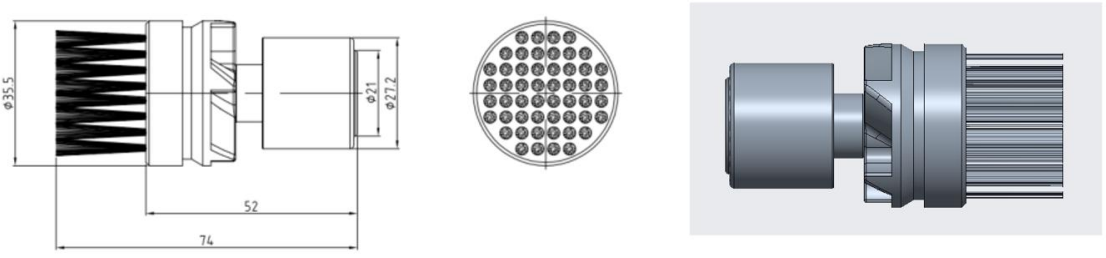
All Pyxis inline sensors support Modbus RTU and operate as Modbus slave devices. In addition to process measurements, the Modbus register map provides access to operating parameters, calibration settings, and diagnostics (including warnings and error codes). The complete register map is documented in ***Communication with Pyxis Digital Probes***. Contact Pyxis Lab Customer Service (service@pyxis-lab.com) for access.

7 Sensor Maintenance & Replacement Maintenance

7.1 Replacing the FR-306-PLUS Brush Assembly

Under normal application use, the FR-306-PLUS brush replacement should be done every 1 to 2-years. This may vary depending on application and water quality. Please refer to the following process steps for replacement of the FR-306-01 (P/N : 20802) brush assembly.

FRP-306-01 Replacement Brushing Assembly (P/N 20802) Dimensions (mm) & Image



FRP-306-01 Brush Replacement Procedure using the FR-300-03 Quick-Replacement Tool

Brush Extraction Tool Assembly (P/N 23504) Dimensions (mm)

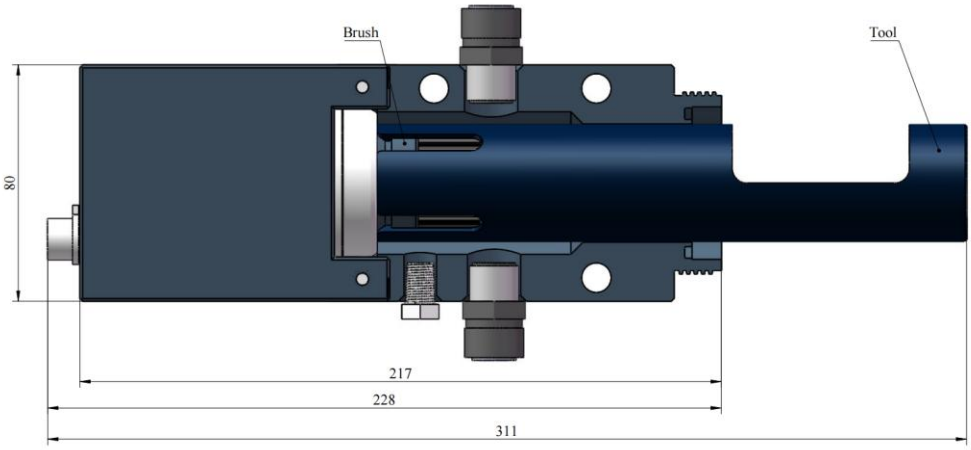
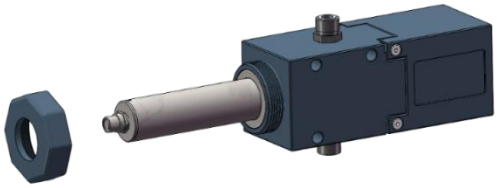
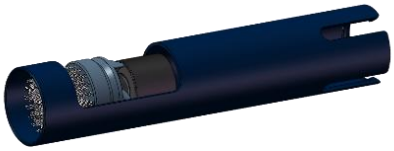
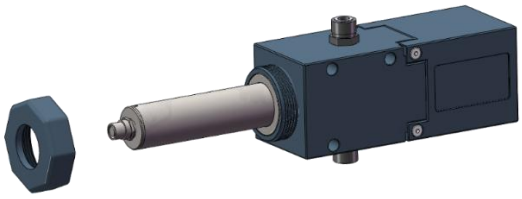


Figure 28

Table 12

STEP.1 Remove the sensor retaining nut.	STEP.2 Remove the sensor.
	
STEP.3 Insert the extraction tool with the slotted end first until the head of the tool snaps onto the collar of the brush.	
	
STEP.4 Remove the brush when it reaches the grooved opening.	
STEP.5 Fit the new brush in the tapered end position of the tool as shown in the picture and insert it into the hole, gently press on the tool until the brush has been adequately installed onto the drive shaft of the brush motor within the flow assembly, then remove the tool. Your brush has been replaced.	
	
STEP.6 Reinstall the sensor to the position as shown in the picture.	STEP.7 Reinstall the sensor retaining nut to the position shown in the picture.
	

7.2 Replacing the Sensor Electrode Head

The electrode head of ST-766SS Series can be replaced when the original electrode head reaches its working life. The typical working life of the electrode head is approximately two years under normal operating conditions.

The ST-766SS Series uses two different types of replacement electrode heads depending on the sensor model:

Figure 29. EH-766

Figure 29A. EH-766-01

Electrode Head	Applicable Sensor Models	P/N
EH-766	ST-766SS-FCL / ST-766-CLO / ST-766-TCL / ST-766-O_3 ST-766-SO3 / ST-766-Br / ST-766-NCL / ST-766-DBNPA ST-766-H_2O_2	22093
EH-766-01	ST-766SS-DCL / ST-766-TFCL / ST-766-PAA	22733

Order the appropriate replacement electrode head from **Pyxis Lab** according to your sensor model and follow the replacement procedure described below.

1. Place sensor power in Flow Interlock manual Mode and then Power OFF the sensor remove and make sure there is no water on the sensor.

   Hold the sensor main body with one hand and use the other hand to twist the locking ring **counterclockwise** until the front end of the electrode is completely unscrewed, as shown in Figure 30.

   NOTE *The sensor electrode head should ALWAYS be oriented towards the ground to avoid residual water getting into the sensor.*

Figure 30

2. Thoroughly wipe the electrode head with a dust-free cloth or paper-towel then pull out the electrode head as shown in Figure 31.

Figure 31

3. Insert the new electrode head into the main sensor housing and ensure that the two alignment protrusions on the electrode head, **one large and one small**, are aligned with the notches in the sensor body housing.

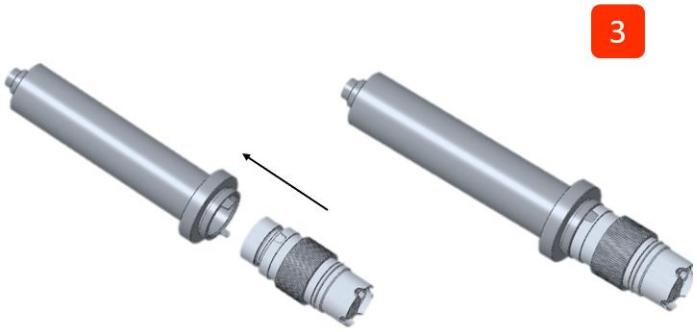


Figure 32

4. Then twist the lock ring of sensor in a clockwise direction until the threads of the electrode head completely enter the sensor housing as shown in Figure 33. *NOTE* Be sure to return your sensor operation to Flow Interlock Auto Mode.

Figure 33

7.3 Sensor Cleaning with Pyxis Probe Cleaning Kit (P/N SER-01)

In the event of heavy inorganic deposition on the ST-766SS Series electrode head, users may conduct an off-line chemical cleaning using the Pyxis Probe Cleaning Kit (P/N: SER-01). Isolate the FR-306-PLUS flow reservoir from flow. Remove the ST-766SS Series sensor from the reservoir and inspect the internal components of the flow reservoir and brush head with a flashlight. If necessary, flush thoroughly with clean water until adequately clean or remove the brush with the Pyxis Brush Extraction Tool. If the FR-306-PLUS brush needs replacement, refer to Section 10.1 of this manual. Soak the lower half of the ST-766SS Series sensor in 100 mL Pyxis Probe Cleaning Solution for 10-15 minutes. Gently wipe the sensor electrode head with the provided Q-tips. If the surface is not entirely clean, continue to soak the sensor for an additional time until clean. Rinse the sensor with distilled water. Pyxis Lab Probe Cleaning Kit can be purchased at our online Estore/Catalog at https://www.pyxis-lab.com/product/inline-sensor-cleaning-kit/

Figure 34 *ST-Series Probe Cleaning Kit (P/N SER-01)*

7.4 Other Common Troubleshooting Issues

If the ST-766SS sensor output signal is not stable and fluctuates significantly, make an additional solution ground connection–connect the black ground wire to a conductor that contacts the sample water electrically such as a brass pipe adjacent to the ST-766SS. For support in troubleshooting or application techniques please contact service@pyxis-lab.com

8 Contact Pyxis Lab

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