ST-765-DCL Series

Inline Sulfite + Free Chlorine Sensor for Dechlorination Applications

Description

Pyxis ST-765-DCL Series are four-parameter composite sensors used for the measurement Free Chlorine (FCL), Sulfite (SO3), pH, and Temperature in compliance with USEPA 334.0 and ISO-7393 guidelines. The sensors are offered in both 304 stainless steel and CPVC body formats for use with fresh and sea water. The sensors advanced PCB's offer built-in Free-Chlorine temperature and pH compensation (up to pH 9.0+) algorithms eliminating the need for a supplemental pH sensor and controller. Unique Bare-Gold electrode technology for Free chlorine and Sulfite measurement eliminates membranes and electrode solution replenishment commonly associated with conventional sensors. The ST-765 Series has a uniquely designed flat bubble pH electrode design for reduced fouling potential. Reduce your maintenance and cost versus conventional electrochemical sensors by utilizing Pyxis replaceable Electrode Head (EH-765-01) for this sensor allowing for years of reliable service. The ST-765 Series may be calibrated in-situ after cleaning via DPD or similar Sulfite wet chemistry test measurement of active sample.

The ST-765-DCL 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-765-DCL series makes this platform less prone to contamination or fouling and is easy to clean.

ST-765SS-DCL
Free chlorine + Sulfite + pH Sensor

The ST-765-DCL Series sensor offers 2x 4-20mA and RS-485 Modbus outputs and is Bluetooth 5.0 enabled when used in conjunction with the MA-CR Bluetooth Adapter. This four-electrode composite sensor provides four measured parameters including free chlorine, sulfite pH and temperature with one sensor equipped with fully integrated 2x 4-20mA and RS-485 Modbus outputs. ST-765-DCL series are uniquely designed for rapid and precise monitoring of de-chlorination (Chlorine-Scavenger) chemical treatment applications for both clean water (using ST-007 inline Tee Assembly) and dirty water (using FR-300-PLUS self-brushing flow assembly) as outlined in this document.

Common Applications

- Chlorine Removal - Wastewater Effluent / Cooling Tower Blowdown / Process Water / RO Feedwater

Specifications

Item	ST-765SS-DCL	ST-765P-DCL
P/N	58444	59907
Sensor Body Material	304SS	CPVC
Free Chlorine Range	0.00-5.00 ppm	
Free Chlorine Precision	± 0.01mg/L or 1% of the value w/pH compensation up to 9.0	
Sulfite Range	0.00-100.00 ppm (auto-range)	
Sulfite Precision	± 1.0mg/L or 1% of the value w/pH compensation up to 9.0+	
pH Range	0-14	
pH Precision	±0.01 pH	
Sensor Power Supply	22 – 26VDC, Power Consumption 2W	
Storage Temperature	-7 °C – 60 °C (20 – 140 °F)	
Outputs	Dual Isolated 4 – 20 mA Analog Outputs + Isolated RS-485 Digital Output	
Dimension (L x D)	Length 8.3 inch (210.8 mm), body diameter 1.4 Inch (35.6 mm)	
Weight	530 g (1.16lbs)	
Maximum Sensor Pressure	100 psi (6.9 Bar) – Sensor Only	
Operating Temperature	4 °C – 49 °C (40 – 120 °F)	
Wet Material	UPVC	
Rating	IP67, Fully Dustproof & Waterproof	
Selectivity	Non-Selective / Cross Sensitive to other Oxidizing Species	
Compliance	EPA 334.0 / ISO 7393	
Regulation	CE Marked / RoHS	
Cables Included	MA-4.9CR Cable (8Pin Adapters – 1.5m) MA-1.5CR Cable (8 Pin Adapter / Flying Leads – 1.5m)	
Typical Electrode Service Life	2 Years	
Electrode Warranty	6 Months	
Sensor Body Warranty	13 Months	

ST-007 INLINE TEE for CLEAN WATER APPLICATIONS *(Sold Separately)*	
Item	**ST-007**
P/N	50700-A51
Sample Inlet Pressure	7.25 – 30 psi (0.05 – 0.2MPa)
Installation	ST-007 Inline Stainless-Steel Tee for CLEAN Water Applications
ST-007 Suggested Flow Rate	200 -400 mL/minute Flow Regulated via upstream Rotameter
ST-007 Sample Inlet/Outlet	1/4 - inch OD Compression

NOTE ST-007 is purchased separately and should be installed downstream of a Rotameter for **CLEAN-WATER APPLICATIONS** <u>only</u>.

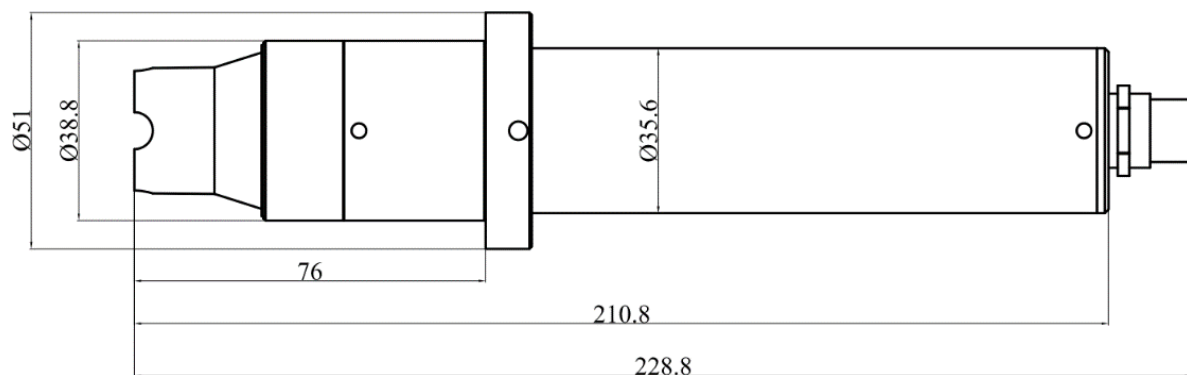| FR-300-PLUS for DIRTY WATER APPLICATIONS *(Sold Separately)*	
Item	**FR-300-PLUS**
P/N	50700-A44
Sample Inlet Pressure	7.25 – 30 psi (0.05 – 0.2MPa)
Installation	FR-300-PLUS Self-Brushing Flow Reservoir for DIRTY Water Applications
FR-300-PLUS Suggested Flow Rate	200 – 800 mL/minute
FR-300-PLUS Sample Inlet /Outlet	3/8 - inch OD
FR-300-PLUS Operation	24VDC/2.5W Powered Constant ON Mode for Relay Control and RS-485
FR-300-PLUS Rotational Speed	200 RPM – Motorized Brush Preset for Constant Operation

NOTE FR-300-PLUS is purchased separately and <u>**IS REQUIRED**</u> for use in **DIRTY/INDUSTRIAL WATER APPLICATIONS**.
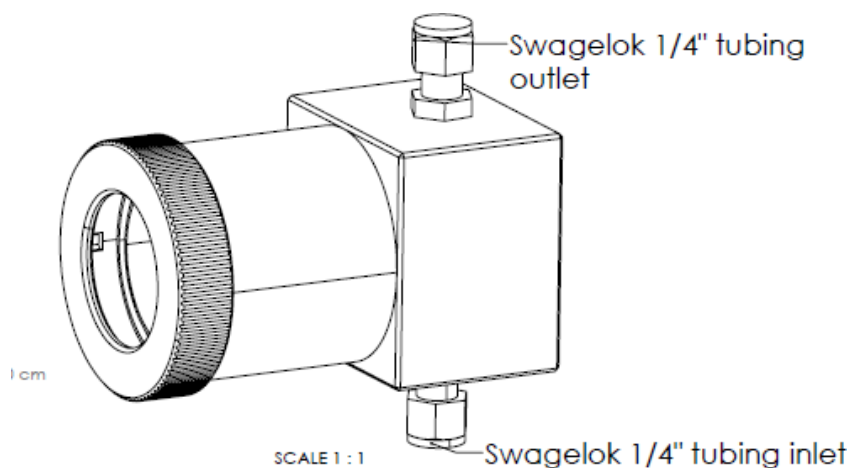
Key Features

- Real-Time pH + Sulfite (0-100ppm) + Free Chlorine (0-5ppm) Detection
- Dual 4-20mA Outputs (Sulfite + Free chlorine) and RS-485
- Bluetooth Enabled when used with MA-CR Adapter Wireless uPyxis Calibration
- Integrated RTD & pH Compensation to pH 9.0+ of the Oxidizer and Sulfite Value
- Replaceable EH-765-01 Reference Electrode Assembly – Simple Maintenance
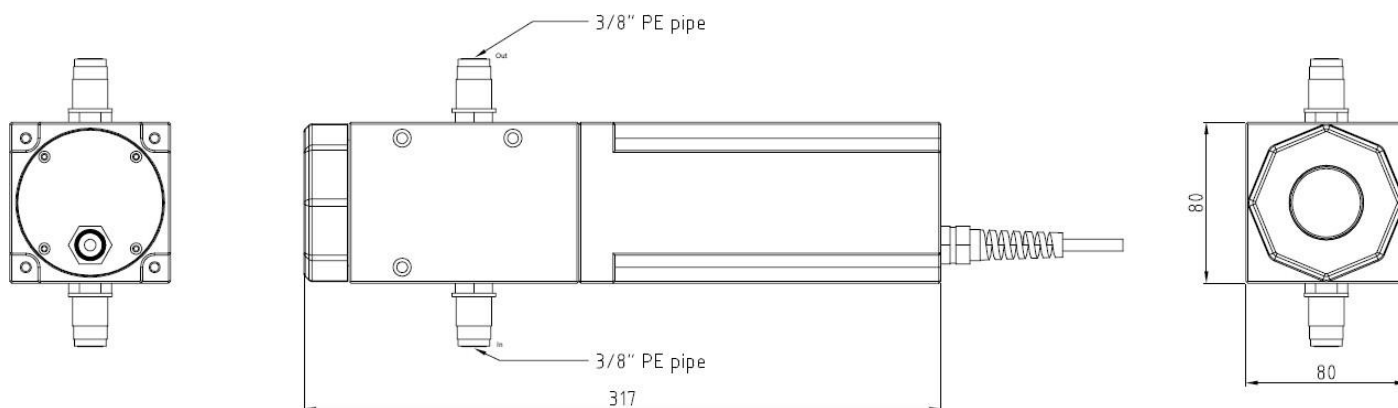- 304 Stainless Steel and CPVC body formats available
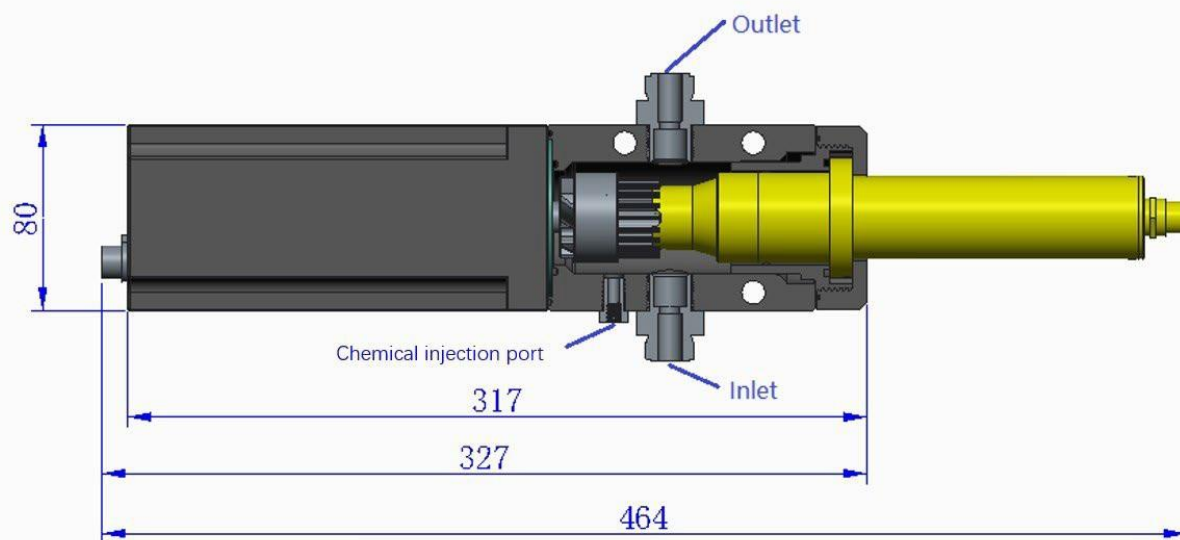
Dimensions of ST-765-DCL Series (mm)

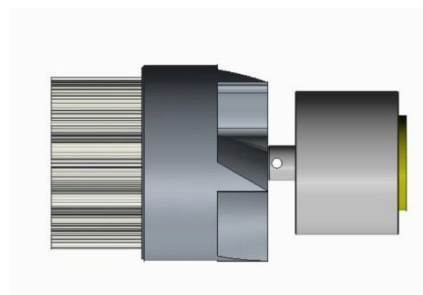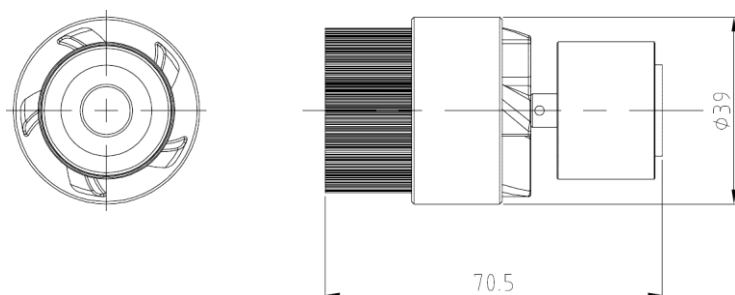## ST-007 Flow Cell Dimensions (mm) – FOR CLEAN WATER USE ONLY

FR-300 Flow Cell Dimensions (mm) – FOR DIRTY/INDUSTRIAL WATER USE ONLY

3/8" PE pipe

3/8" PE pipe

317

80

80

FR-300-PLUS Component Schematic

Outlet

80

Chemical injection port

Inlet

317

327

464

FR-300-01 Replacement Brushing Assembly Dimensions (mm) & Image

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-765 Series inline sensors, the uPyxis APP enables users to conduct a wireless probe calibration of pH and oxidizer from the touch of their smart device. The uPyxis direct calibration of the sensor eliminates unnecessary time wasted with calibrating the probe through the receiving controller and ensures the highest degree of accuracy and minimizes time spent in the field.

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 Bluetooth Adapter (P/N: MA-CR). Details can be found in the Order Information section of this Data Sheet.

Order Information | P/N

ST-765SS-DCL *(Inline Stainless-Steel Sulfite + Free Chlorine Sensor 0 – 100ppm / 0- 5.0ppm)*   58444

ST-765P-DCL *(Inline CPVC Sulfite + Free Chlorine Sensor 0 – 100ppm / 0- 5.0ppm)*   59907

Optional-Replacement Accessories | P/N

EH-765-01 *(ST-765SS-DCL & ST-765P-DCL Replacement Reference Electrode Assembly)*   27918

ST-007 *(Inline Stainless Steel Tee Assembly for use with CLEAN WATER ONLY)*   50700-A51

HALL EFFECT FLOW METER *(Inline ¼-inch Flow Meter for CLEAN WATER ONLY)*   16008

FR-300-PLUS *(Auto-Brushing Flow Assembly for INDUSTRIAL WATER ONLY)*   50700-A44

FRP-300-1 *(Replacement Brush Head for FR-300-PLUS)*   50700-A49

MA-AC-7US *(110VAC Power Supply Adapter for FR-300-PLUS with USA Plug)*   26398

MA-AC-7EU *(230VAC Power Supply Adapter for FR-300-PLUS with EU-DIN Plug)*   28787

NANO-FLOW *(Pyxis Ultrasonic Flow Measurement and Regulation Module)*   21329

MICRO-ROTAMETER FOR ST-007 USE *(Adjustable Micro Rotameter 0 -1.0 Liter/Min)*   22876

MA-CR Bluetooth Adapter *(Optional 8-Pin Bluetooth-USB Adapter for use with uPyxis APP)*   MA-CR

MA-50CR *(50-ft Cable Extension 8-Pin for ST-765 Series)*   50743

OxiPanel IK-765SS-DCL *(Sulfite + Free Chlorine + pH + Temperature Analyzer for Clean Water)*   42165

OxiPanel IK-765SS-DCL-B *(Sulfite + Free Chlorine + pH + Temperature Analyzer for Dirty Water)*   46758

SP-200 OxiPocket™ *(Pocket All-Oxidizing Disinfectants Colorimeter & Fluorometer)*   50802