Pyxis®

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DATA SHEET

Product Description

The Pyxis IK-765P-DCL inline residual Chlorine and Sulfite panel is a multi-parameter inline water analyzer specifically designed as a 'Turn-Key' monitoring solution for clean water applications that require constant validation of chorine removal prior to membrane or other critical to quality system applications. This proprietary technology offers highly accurate and simultaneous measurement, display, and data-logging of Chlorine (user selected as Free or Total Chlorine), Sulfite residual, pH, Temperature, and sample flow rate utilizing proprietary Pyxis Lab smart sensor technology, coupled with a Pyxis UC-80 touch screen display and data logging terminal.

As an added feature, the analyzer comes equipped with an extra inline tee assembly, quick adapter cable and interface programming for the use of the ST-500RO inline PTSA sensor (sold separately) enabling real-time measurement of traced antiscalant treatment programs. The IK-765P-DCL is offered in CPVC construction enabling its use in both Fresh Water and Sea Water monitoring applications. This analyzer design is a convenient and easy to integrate panel mounted solution for rapid installation and simple maintenance.

The IK-765P-DCL analyzer panel design is equipped with the propriety Pyxis ST-765 Series smart sensor configured to simultaneously measure oxidizer as Free or Total Chlorine and Sulfite concentration while also measuring pH and temperature with optional of the sample water for refined compensation. Additionally, the analyzer is equipped with the Pyxis FS-100 ultrasonic flow sensor with motorized ball valve for real time, precise sample flow measurement and regulation and the ST-500RO inline PTSA sensor may be added as an optional monitoring sensor based on user need.

This Pyxis ST-765 Series sensor design is membrane-free and based on unique principles and incorporates Pyxis' advanced technology in the field of bare-gold electrochemical detection. The ST-765P-DCL (CPVC) sensor include on this analyzer measures the oxidant level, sulfite level and pH simultaneously while performing temperature and pH compensation for the measurement of oxidant based on conditions present in the application of use. This technology can provide significant value in a variety of water and process applications helping to extend equipment life and performance while improving regulatory compliance.

Typical Applications

- Pre-Ion Exchange Chlorine Removal (Demin, Softening, Mixed Bed)
- Pre-Filter Chlorine Removal (UF, NF)
- Pre-Membrane Chlorine Removal (Reverse Osmosis)
- Chlorine Removal in Clean Process Water Applications

Turn-Key Installation

The IK-765P-DCL analyzer requires a small installation footprint, with simple maintenance and is specifically designed for use in clean water and process applications. Each panel is also provided with two ST-001 (CPVC) Inline Flow Tee Assemblies along with an inlet gate valve and motorized ball valve for flow adjustment and the Pyxis FS-100 ultrasonic flow meter for precise sample flow measurement/regulation. The UC-80 display/data logging terminal is prewired to the FS-100 and ST-765P-FCL sensor in RS-485 Modbus format with fully integrated sensor data logging, diagnostics, and calibration interface. This unique platform results in a constant and highly accurate oxidizer measurement consistent with DPD wet chemistry methodology as well as simultaneous Sulfite residual and optional PTSA to provide the most rapid visibility and response to dichlorination control verification, eliminating extreme costs associated with RO equipment downtime and membrane damage.

ST-765P-DCL Features

The included ST-765P-DCL (CPVC Free or Total Residual Chlorine + Sulfite + pH + Temperature) is a multi-parameter composite sensor used for the measurement Free or Total Residual Chlorine, Sulfite, pH, and Temperature in compliance with USEPA 334.0 and ISO-7393 guidelines. This sensors advanced PCB offers built-in temperature and pH parameter compensation (up to pH 9.0+) algorithms eliminating the need for a supplemental pH sensor and controller. Unique Bare-Gold electrode technology for residual oxidizer and Sulfite measurement eliminates burn-in time, membranes and electrode solution replenishment commonly associated with conventional Chlorine sensors. The ST-765 Series has a uniquely designed flat bubble pH electrode design for reduced fouling potential. Reduce your maintenance and cost versus colorimetric chlorine measurement or conventional electrochemical sensors by utilizing Pyxis replaceable Dual Gold Electrode Head (EH-765-01) for this sensor allowing for years of reliable service. The ST-765SS Series may be calibrated in-situ when clean via DPD Free/Total Chlorine or Sulfite wet chemistry test measurement of active sample.

Secondary Tee System Features

The inline Pyxis sensor is installed using the uniquely designed ST-001 (CPVC) inline tee assembly providing a compact design and bottom-up flow ensuring constant sensor flooding. A second unused/plugged ST-001 tee assembly is provided on the analyzer panel for users desiring to monitor PTSA antiscalant tracer residual by adding the optional ST-500RO sensor sold separately. The water sample inlet line contains an integrated gate valve and motorized ball valve along with the FS-100 ultrasonic flow sensor capable of precisely measuring and regulatingflow within 1mL/min of precision, allowing the users to finely adjust and record the sample flow rate to the recommended flow range of 200–800mL/minute. The recommended maximum inlet pressure of IK-765P-DCL analyzer is 60psi and discharge should be directed to drain. The sensor is connected to the UC-80 display/data logger via RS-485 Modbus (RTU) allowing for integrated sensor calibration interface and diagnostics within the display touch screen.

Panel Features

Convenient and simple to install back-panel for rapid and easy installation. Truly a plumb and power to go platform with intense factory setup, testing and sensor calibration prior to shipment.

Display Features

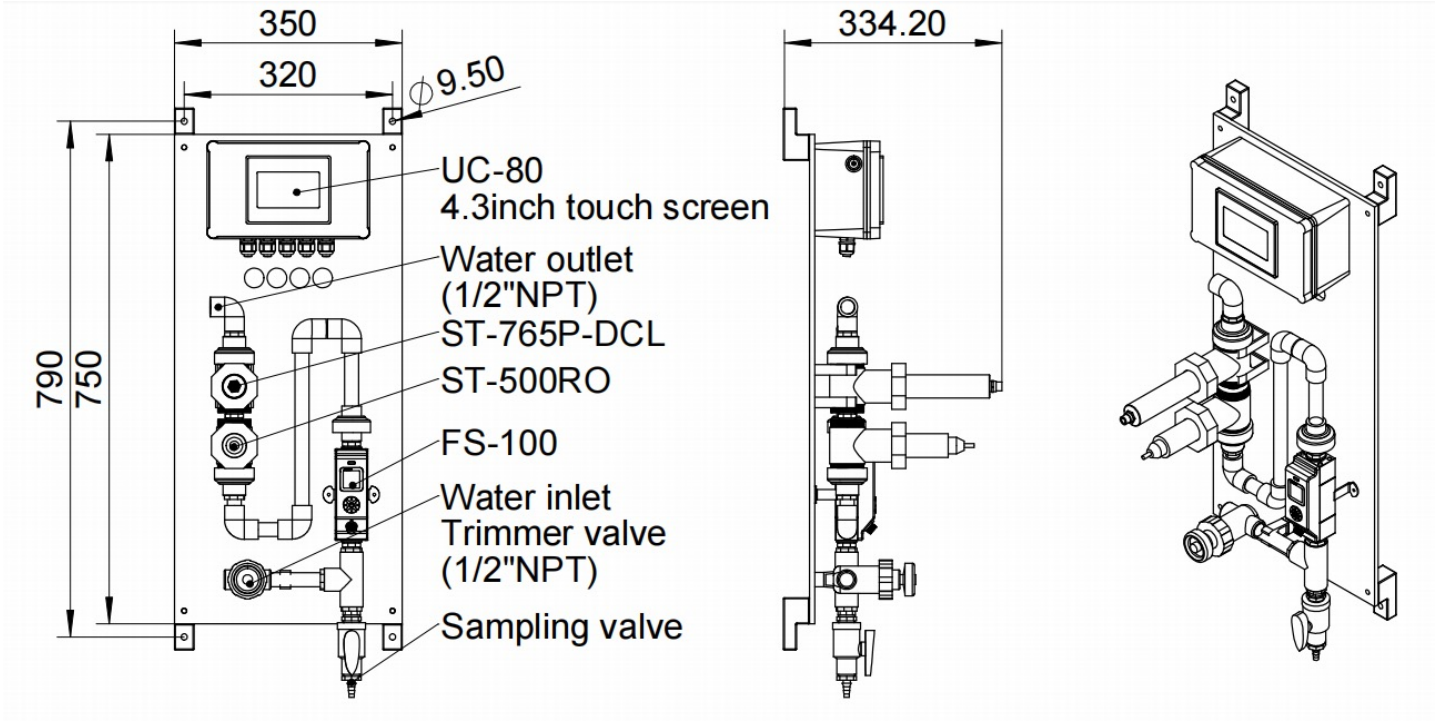
The UC-80 touch screen display/data logger interface with sensor calibration integrated. Display/data logger offers 3x 4-20mA outputs, RS-485, Modbus TCP and 2x-24VDC Relays. Pyxis NB-IOT card is preinstalled and may be activated upon user enrollment for wireless data to cloud transmission.

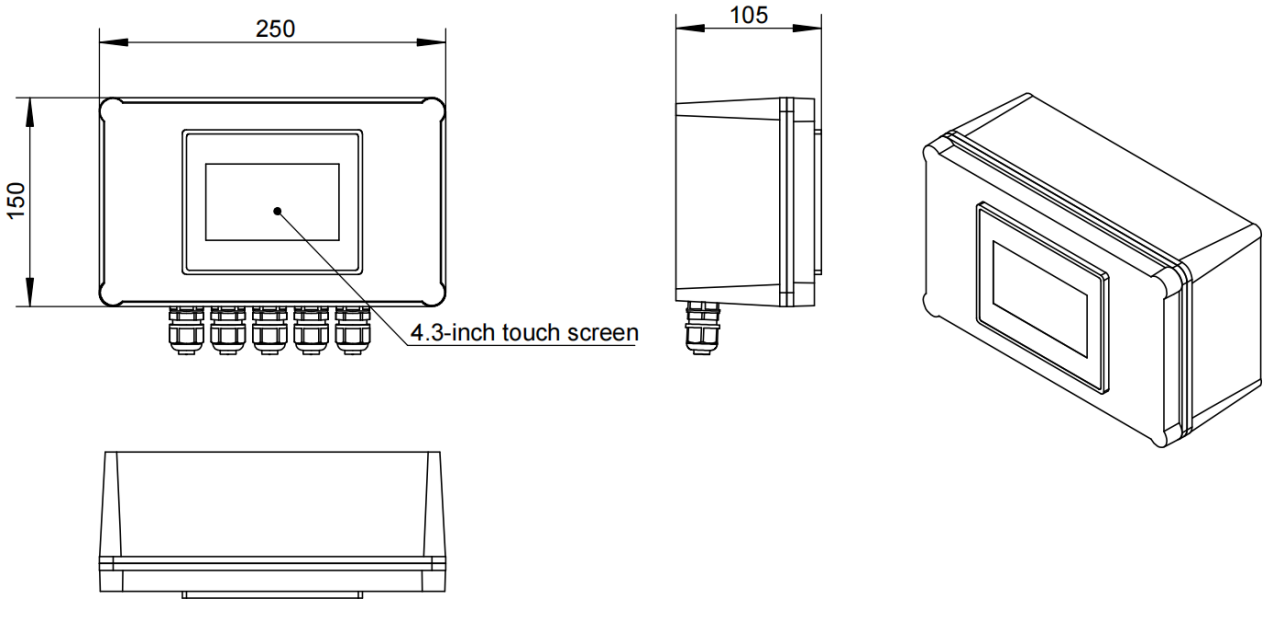
Specifications

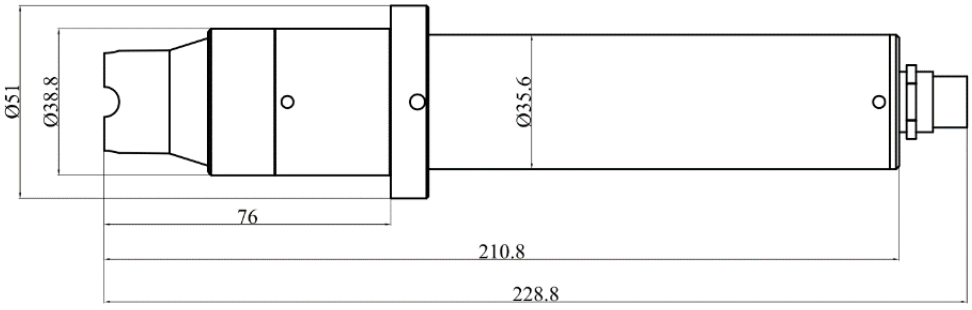
Item	IK-765P-DCL
P/N	49514
Sensor Name	ST-765P-DCL (59907)
Sensor Body Material	CPVC/Titanium
Chlorine Range	0.001–5.000mg/L
Chlorine Form[1]	User Selected Free or Total[1]
Sulfite Range	0.001–100.00mg/L Sulfite (Auto-Range)
Precision	±0.01mg/L or 1% of the value w/pH compensation up to 9.0+
pH Range	0–14
pH Precision	±0.01pH
PTSA Sensor Name[2]	ST-500RO (50669)
PTSA Range[2]	0.00–40.00ppb (±0.01ppb)
Operation Temp.	4–49 °C (40–120 °F)
Inlet Pressure	7.25–60psi (0.05–0.4MPa)
Sensor Response Time	T95≤60s - Oxidizer / T95≤5s - pH
Measurement Interval	Continuous Measurement with the FS-100 Ultrasonic Flow Meter
Installation	ST-001 (CPVC) Flow Cell
MIN Flow Rate	200mL/min
MAX Flow Rate	800mL/min
Sample Inlet	½ inch NPT
Sample Outlet	½ inch NPT
Panel Power Supply	96–260VAC / 50-60Hz; 60W
Panel Storage Temp.	-4–158 °F (-20–70 °C)
Panel Operation Temp	32–122 °F (0–50 °C)
UC-80	
Display	4.3inch LCD Color 480 x 272 Pixel Resolution / Resistive Touch
Input	RS-485 Modbus - RTU
Output	(3) 4-20 mA / RS-485 Modbus-RTU / Modbus-TCP
Data Storage	Built-In 1GB of Ram for Storing up to 1-Million Data/Event Records
USB	(1) USB host, For Data Downloading and Screen Upgrade
Relative Humidity	20 - 90% (No Condensation)
Altitude	<6,561 feet (<2,000 Meter)
Relay	(2) 24V DC Relays (Passive Output or Active Output – User Selected)
Dimensions	600 H x 300 W x 334 D (mm)
Approx. Weight	~10kg
Wet Material	CPVC
Rating	IP-65 Panel-Display / IP-67 Sensor
Selectivity	Non-Selective / Cross Sensitive to other Oxidizing Species
Compliance	EPA 334.0 / ISO 7393
Regulation	CE Marked / RoHS / UKCA
Electrode Service Life	2 Years
Electrode Warranty	6 Months
Sensor Body Warranty	13 Months
Pyxis NB-IOT Gateway	Included & Activated on Request with Enrollment – Contact Pyxis Lab

[1]The Total Chlorine measured is as Virtual Total Chlorine and does not incorporate Potassium Iodide injection for "True" Total Chlorine EPA compliance. Pyxis Lab is consistently updating technologies and specifications may change without notice. [2]ST-500RO for measurement of PTSA is an optional sensor sold separately.

Dimensions (mm)







Order Information	Part Number
IK-765P-DCL Analyzer	49514

Optional/Replacement Accessories	Part Number
ST-765P-DCL CPVC Free Chlorine + Sulfite + pH Sensor	59907
EH-765-01 Replacement Electrode Head	27918
ST-500RO Fresh Water 0–40ppb PTSA Sensor	50669-NT
ST-500RO-Ti Sea Water 0–40ppb PTSA Sensor	51394-NT
ST-001 Replacement Flow Cell	50704
FS-100 Ultrasonic Flow Sensor	54200
UC-80 Display & Data Logging Terminal	14003
Pyxis pH Combo Calibration Solution Kit	57007
Pyxis Zero Oxidizer Calibration Standard 0ppm	21022
Pyxis Sulfite Dropper Kit	TK35290-Z
Flow Regulating Motorized Valve with 4-20mA Control	21972
SO2-LR Low Range Sulfite Test Kit	30604
Probe Cleaning Kit	SER-01
SP-200 OXIPOCKET	50802
SP-800 Mutliparameter Colorimeter	50610
SP-350RO PTSA Handheld	61389
PTSA-30 30ppb Calibration Standard Solution	PTSA-30