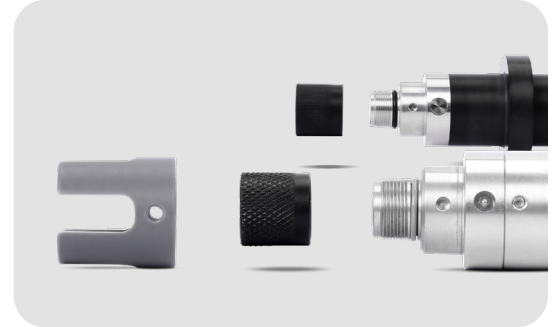


## ST-772 Series Luminescent Dissolved Oxygen Sensor



### Product Description

The Pyxis ST-772 Series optical luminescent dissolved oxygen (DO) sensor is based on the principle of 'fluorescence quenching' to determine the dissolved oxygen content in water. It incorporates Pyxis' advanced technology in the field of fluorescence detection and uses Blue/Red light detection with excitation and reference light sources, offering a wide detection range and very low detection limit. The sensor also integrates temperature and pressure sensors, which can perform temperature and pressure compensation for the measurement of dissolved oxygen based on ambient environmental conditions present in the application of use.

The ST-772 offers an easily replaceable, front loading DO membrane cap that has been independently developed by Pyxis Lab, with a typical service life of up to two years. This unique DO membrane cap design incorporates a black microporous PTFE membrane material designed to provide extreme scratch resistance, extended life span and simple replacement. The flat front-end design of the ST-772 makes this platform less prone to contamination or fouling and is very easy to clean. The sensor body is composed of 304 stainless steel or CPVC and is well suited for aggressive industrial applications.

The ST-772T (304SS) and ST-772T-P (CPVC) models are offered for inline or bypass flow installations. The ST-772 series offers both 4-20mA and RS-485 Modbus outputs and is Bluetooth® enabled when used in conjunction with the MA-CR Bluetooth® Adapter.

### Features

- i. 0.004–20mg/L Measurement Range
- ii. No Membrane Replacement or Electrolyte Replacement
- iii. Simple DO Cartridge Replacement every 2 Years
- iv. Built-In Temperature & Pressure Sensor with Automatic Compensation
- v. Accurate & Stable Measurement with Ultra-Low Drift Requiring NO Calibration for up to 2 Years
- vi. Built-In Transmitter without Pre-Amplifier or Meter Head
- vii. Dual Outputs, both 4-20mA Isolated Signal & RS-485 Modbus
- viii. Wireless Calibration, Diagnostics, Data Trend via uPyxis app when used with MA-CR
- ix. Slope Calibration with Air or Air Saturated Water / Zero Calibrate with 5% Sulfite Solution or Nitrogen Gas
- x. Submersible (ST-772 or ST-772P) or Inline Pipe Tee (ST-772T or ST-772T-P) Installation Versions Available

## Typical Applications

- Activated Sludge / Aeration Basin / Nutrient Removal
- Wastewater / Sewage Processing
- Chemical / Process Water Applications
- Domestic / Drinking Water Applications
- Filtration Applications
- Aquaculture
- Agriculture
- Compliant USEPA 40CFR Part 136.3 as an approved method for measurement of Dissolved Oxygen in Wastewater, Drinking Water and Direct Discharge

## Specifications

Item	ST-772	ST-772-P	ST-772T	ST-772T-P
<b>P/N</b>	53703	53720	53719	53721
<b>Body Material</b>	304SS	CPVC	304SS	CPVC
<b>Wet Material</b>	304SS/Polycarb	CPVC/Titanium	304SS/Polycarb	CPVC/Titanium
<b>Installation Method</b>	Submerged Installation		Bypass/Inline Installation	
<b>Cables Provided</b>	4.9ft/1.5m Flying Lead & 30ft/10m Bulkhead		4.9ft/1.5m Flying Lead & 30ft/10m Bulkhead	
<b>DO Range (4-20mA)</b>	0.004–20mg/L or 0–200% Saturation or 0–500mbarP02			
<b>Temp. Range (4-20mA)</b>	32–122 °F (0–50 °C) ±0.2% of the Value			
<b>Resolution</b>	0.01mg/L			
<b>Accuracy</b>	±0.1mg/L or ±1%, Whichever is Greater			
<b>Light Source</b>	Blue Light Irradiated Emission / Red Light Quenching Excitation			
<b>Response Time</b>	<60 seconds			
<b>Operational Temp.</b>	0–45 °C (32–113 °F)			
<b>Operating Voltage</b>	22–26V DC, Power 0.6W			
<b>Signal Output</b>	(2) 4-20mA Analog Output / RS-485 Digital Output			
<b>Dimension (LxD)</b>	296x33.6mm (11.65x1.32in)			
<b>Weight</b>	760g (1.67lb) Cable Excluded			
<b>Working Pressure</b>	145psi			
<b>Calibration</b>	Slope Cal: Air or Air Saturated Water / Zero Cal: 5% Sodium Sulfite or Nitrogen Gas			
<b>DO Membrane Cap Life</b>	2 Years			
<b>Protection Grade</b>	IP-67/IP-68			
<b>Regulation</b>	CE/RoHS			
<b>Compliance</b>	USEPA 40CFR Part 136.3			

Contact Us at [order@pyxis-lab.com](mailto:order@pyxis-lab.com) for More Information...

## **ST-772/ST-772-P Standard Accessories (For Submersed Applications)**

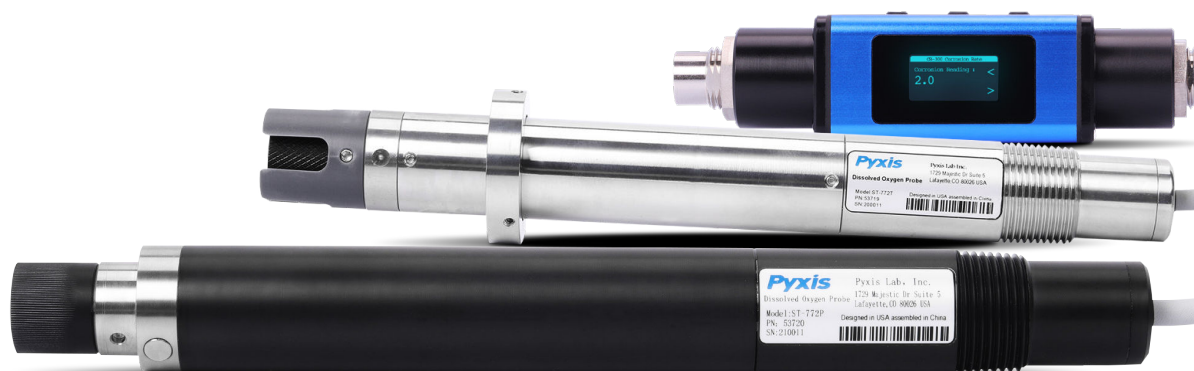
### **The Following Accessories are included upon delivery:**

- (1) ST-772 (304SS) or ST-772-P (CPVC) Dissolved Oxygen Probe with 30ft/10m Bulkhead Cable
- (1) DCC-1 Membrane Cap (P/N - 53712)
- (1) MA-1.5CR Cable (1.5m/4.9ft 8-PIN Female Adapter/Flying Lead)
- (1) MA-CR Bluetooth® Adapter for 8-PIN Sensors
- (1) MA-NEB Bluetooth®/USB Adapter for use with uPyxis Desktop
- The Full Instrument Manual is available for download at [www.pyxis-lab.com/document-library](http://www.pyxis-lab.com/document-library)

## **ST-772T/ST-772T-P Standard Accessories (For Submersed Applications)**

### **The Following Accessories are included upon delivery:**

- (1) ST-772T (304SS) or ST-772T-P (CPVC) Dissolved Oxygen Probe with 30ft/10m Bulkhead Cable
- (1) ST-001 Inline Tee Assembly
- (1) DCC-1 Membrane Cap (P/N - 53712)
- (1) MA-1.5CR Cable (1.5m/4.9ft 8-PIN Female Adapter/Flying Lead)
- (1) MA-CR Bluetooth® Adapter for 8-PIN Sensors
- (1) MA-NEB Bluetooth®/USB Adapter for use with uPyxis Desktop
- The Full Instrument Manual is available for download at [www.pyxis-lab.com/document-library](http://www.pyxis-lab.com/document-library)



## ST-772 Series Optional & Replacement Accessories

P/N	Optional & Replacement Accessories
MA-CR	MA-CR Bluetooth® Adapter for 8-PIN Pyxis Sensors
53705	MA-150-1 Floating Submersion Adapter Kit (For ST-772 & ST-772P)
50783	MA-120-B Fixed Submersion Adapter Kit (For ST-772 & ST-772P)
50704	ST-001 Inline Tee Assembly (3/4in NPT, for ST-772T & ST-772T-P)
53712	DCC-1 Dissolved Oxygen Membrane Cap - Replacement
50743	MA-50CR (50' Extension Cable with 8-PIN Adapter)
50744	MA-100CR (100' Extension Cable with 8-PIN Adapter)

## ST-772T and ST-772T-P Inline/Bypass Flow Installation Option

### Pipeline Installation

The ST-772T (304SS) and ST-772T-P (CPVC) may be installed in a pressurized inline flow application as high as 145 psi (10Bar) using the provided Pyxis ST-001 Inline Tee Assembly. The ST-001 offers 3/4" FNPT Thread or Socket Weld Adapters with Unions for easy installation and sensor maintenance. Pyxis recommends installation in a vertical flow format from bottom up to reduce the impact of water bubbles. Install O-ring on the sensor and then install the sensor into the tee and ensure the DCC-1 membrane cap is in the direction of water flow as shown in *Figure 1*.

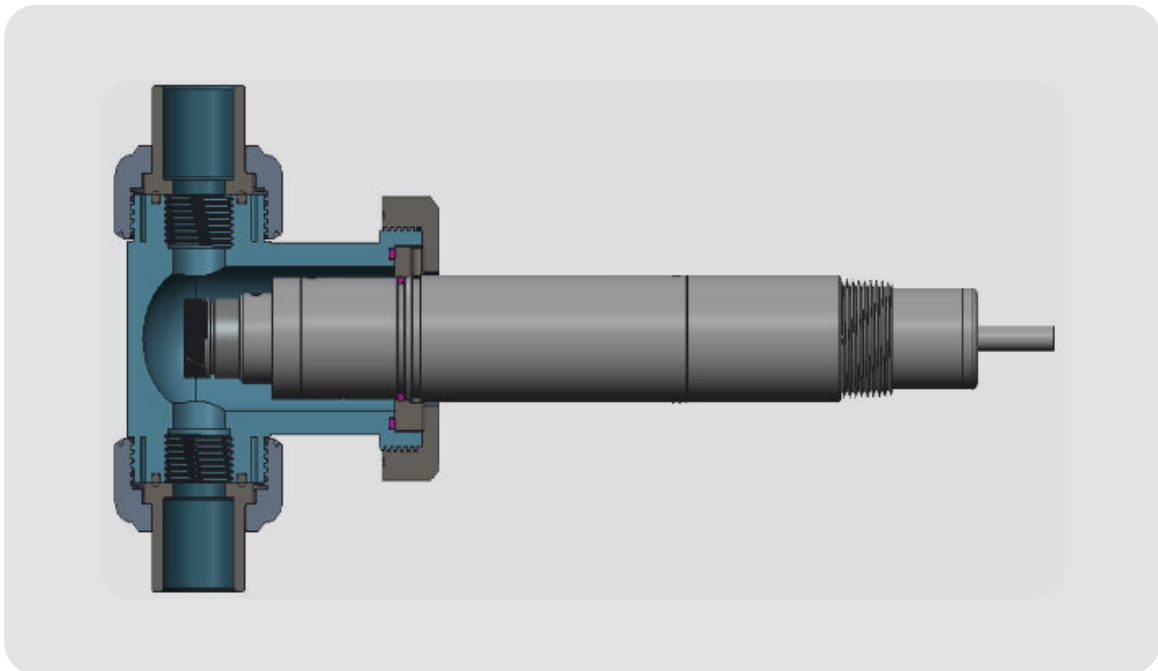


Figure 1. ST-772T/T-P Installed in a pipeline using the ST-001 Tee Assembly

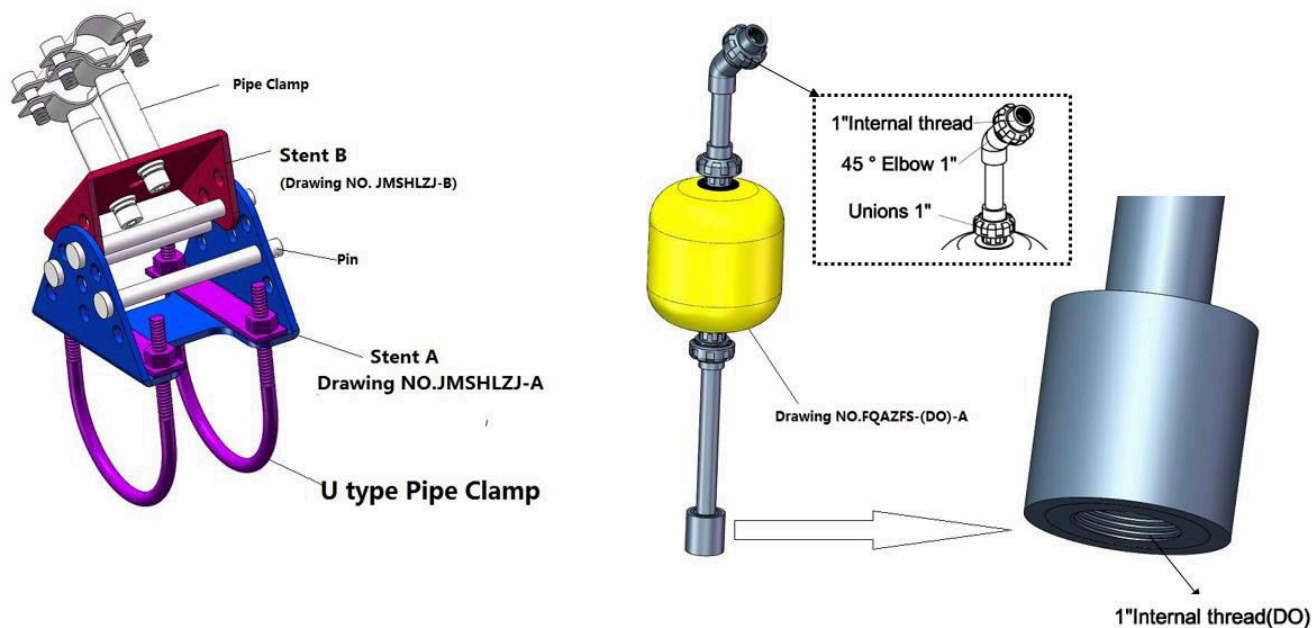
Contact Us at [order@pyxis-lab.com](mailto:order@pyxis-lab.com) for More Information...

## ST-772 and ST-772-P Submersed Floating Installation

### MA-150-1 Submersed Floating Installation

The ST-772 (304SS) and ST-772-P (CPVC) may be installed in a submersed/floating application using the MA-150-1 Submersed Floating Adapter Kit. This kit contains a swiveling conduit mounting bracket and ball float-probe adapter assembly in 1" FNPT. The ST-772 and ST-772-P dissolved oxygen sensors need to be installed as shown in *Figure 2*. For installation, users only need to purchase the MA-150-1 from Pyxis Lab and may obtain water-tight conduit and cable seal adapter from their supplier of choice. For sensor replacement and maintenance, users only need to pull the MA-150-1 and DO sensor from fixing bracket vertically (upward).

#### MA-150-1



The stainless steel pipe needs to be purchased by the user.

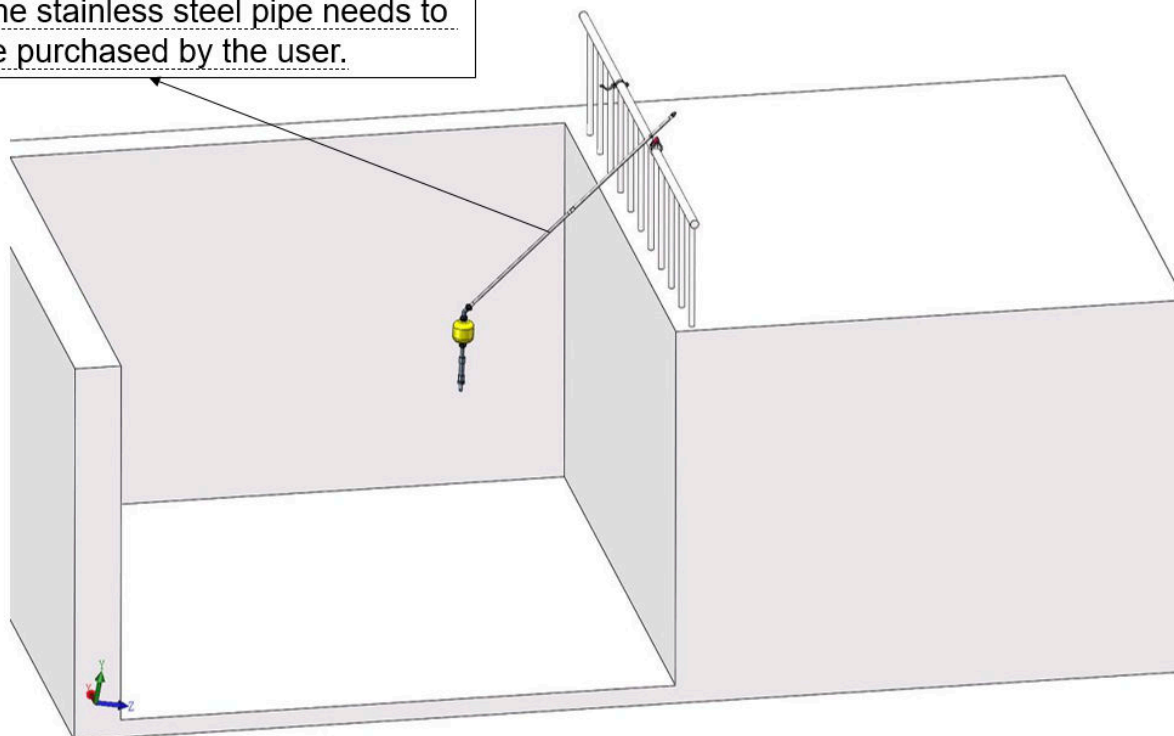


Figure 2. ST-772 / ST-772-P in a submersed floating installation

## ST-772 and ST-772-P Submersed Fixed Installation

### MA-120-B Submersed Fixed Installation

The ST-772(304SS) and ST-772-P (CPVC) may be installed in a submersed/fixed application using the MA-120-B Submersion Adapter Mounting Bracket and probe adapter coupler in 1" FNPT. The ST-772 and ST-772-P dissolved oxygen sensors need to be installed as shown in *Figure 3*. For installation, users only need to purchase the MA-120-B from Pyxis Lab and may obtain water-tight conduit and cable seal adapter from their supplier of choice. For sensor replacement and maintenance, users only need to pull the MA-120-B and DO sensor from fixing bracket vertically (upwards).

### MA-120-B

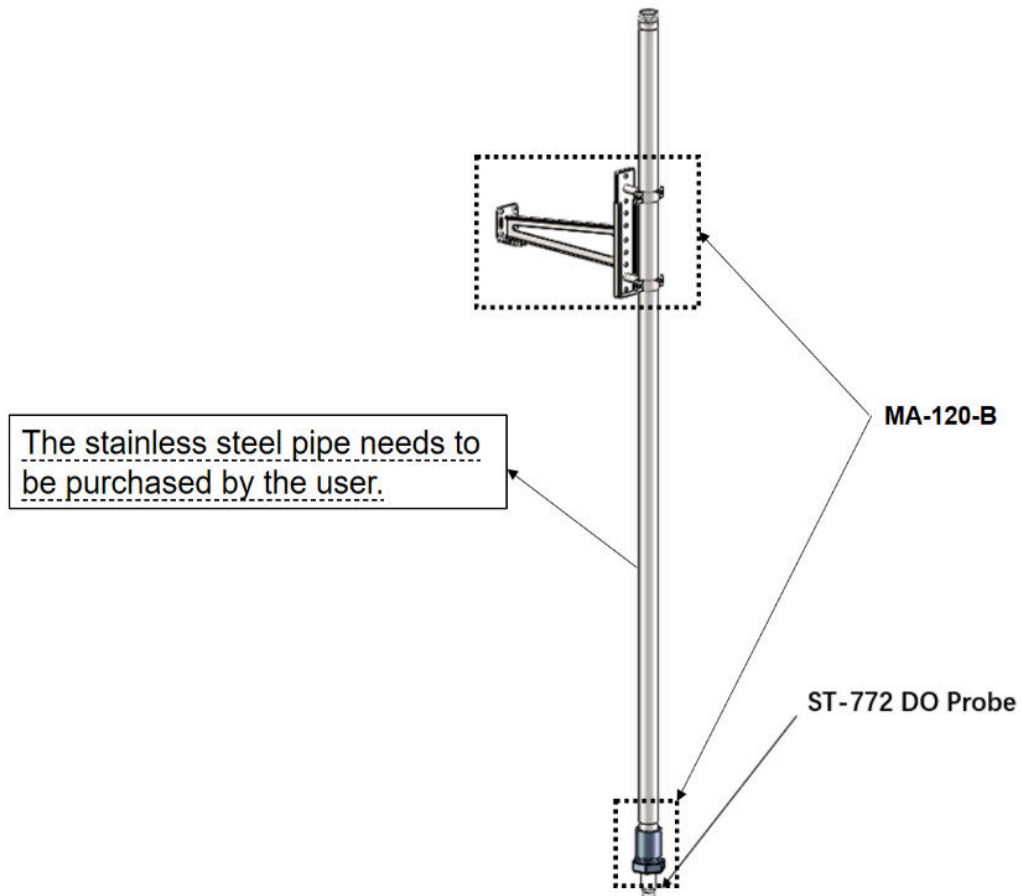
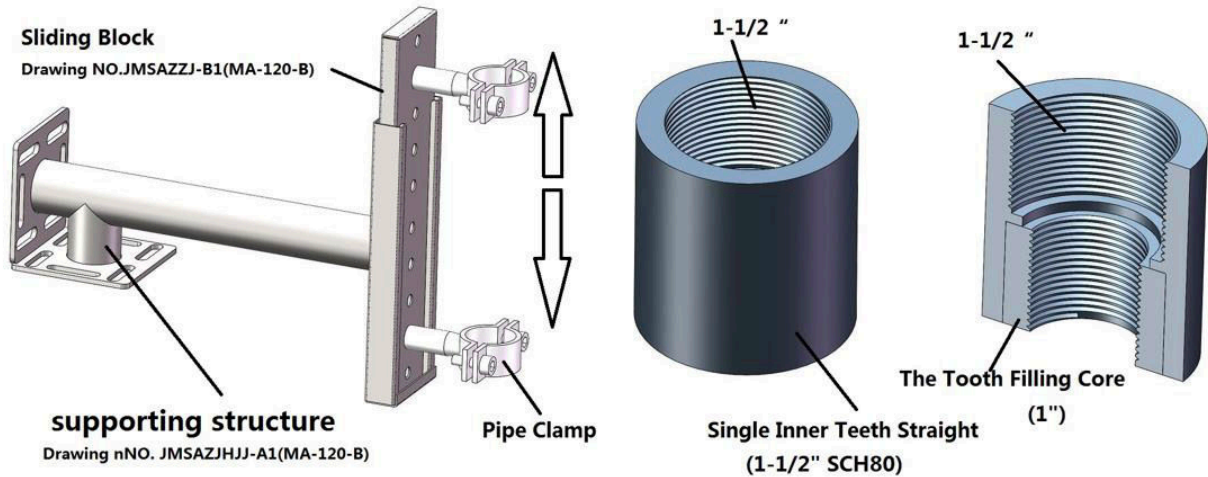


Figure 3. ST-772 / ST-772-P in a submersed fixed installation

### Order Information

ST-772 Stainless Steel Submersed DO Sensor  
ST-772-P CPVC Submersed DO Sensor  
ST-772T Stainless Steel Inline Tee DO Sensor  
ST-772T-P CPVC Inline Tee DO Sensor

### Part Number

53703  
53720  
53719  
53721

### Additional Accessories

MA-CR Bluetooth® Adapter  
MA-150-1 Submersion Float Adapter  
MA-120-B Fixed Submersion Adapter  
DCC-1 Dissolved Oxygen Membrane Cap  
ST-001 Inline Tee Kit  
UC-50 Display & Data Logging Terminal  
UC-100S Touch Screen Display & Data Logging Terminal  
UC-100 Back Panel  
MA-50CR 50ft 8-PIN Extension Cable  
MA-100CR 100ft 8-PIN Extension Cable

### Part Number

MA-CR  
53705  
50783  
53712  
50704  
43007  
43047  
UC-100 Panel  
50743  
50744

### *uPyxis® Diagnosis, Calibration & Historical Data Transfer*

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-772 Series Dissolved Oxygen sensor, the uPyxis APP enables users to diagnose, clean and calibrate the sensor at both zero and slope points, preventing the need to calibrate the sensor through the receiving controller or PLC.

#### **NOTE:**

The 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-app](http://www.pyxis-lab.com/upyxis-app)**

