

ST-772

Luminescent Dissolved Oxygen Sensor

Product Description

The Pyxis ST-772 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 dual Blue/Red light detection technology 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 and is well suited for aggressive industrial application use. The ST-772 may be utilized in a submersed fixed or floating application with the Pyxis submersion rod and stand-pipe or floating assemblies, or it may also be used in an in-line pressurized Tee assembly format (ST-772T). The ST-772 offers both 4-20mA and RS-485 Modbus outputs and is Bluetooth enabled when used in conjunction with the MA-CR Bluetooth Adapter.



ST-772 DO Sensor



ST-772T DO Sensor

Product Features

- 0.004-20mg/L measurement range
- No Membrane Replacement or Electrolyte Replacement
- Simple DO Cartridge Replacement every 2 years
- Built-in temperature and pressure sensor with automatic compensation
- Accurate and stable measurement with ultra-low drift requiring no calibration for up to 2 years
- Built-in transmitter without preamplifier or meter head
- Dual Outputs both 4-20mA isolated signal and RS-485 Modbus
- Wireless Calibration, Diagnostics, Data Trend via uPyxis APP when used with MA-CR Bluetooth Adapter
- Slope calibrate with air or air saturated water / Zero calibrate with 5% Sulfite solution or Nitrogen Gas
- Submersible (ST-772) or Inline Pipe Tee (ST-772T) 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-772T |
|-------------------------|---|---|
| P/N | 53703 | 53719 |
| Measuring Range | 0.004-20mg/L or 0-200% Saturation or 0-500mbarP02 | |
| Resolution | 0.01mg/L | |
| Accuracy | ± 0.1mg / L or ± 1%, whichever is greater | |
| Light Source | Blue Light Irradiated Emission Red Light Quenching Excitation | |
| Response Time | <60 Seconds | |
| Operational Temperature | 0 °C – 45 °C (32 - 113° F) | |
| Operating Voltage | 22 – 26V DC, Power 0.6W | |
| Signal Output | 4-20mA analog output / RS-485 digital output | |
| Dimension (L x D) | 296 x33.6 mm (11.65x 1.32 inches) | |
| Weight | 760 g (1.67 lb) cable excluded | |
| Installation Method | Submerged Installation | ByPass / Inline Installation |
| Material | 304 stainless steel | |
| Working Pressure | 145 psi | |
| Wet Material | 304 stainless steel / PVC and polycarbonate | |
| Cables Provided | 4.9ft/1.5m Flying Lead Cable – 8Pin 30ft/10m Bulkhead Cable – 8Pin | 4.9ft/1.5m Flying Lead Cable – 8Pin 4.9ft/1.5m Bulkhead Cable – 8Pin |
| Calibration | Slope calibration Air or Air Saturated Water Zero calibration: 5% Sodium Sulfite or Nitrogen Gas | |
| DO Membrane Cap Life | 2 years | |
| Protection Grade | IP-67/IP-68 | |
| Regulation | CE / RoHS | |
| Compliance | USEPA 40CFR Part 136.3 | |

ST-772 Standard Accessories (For Submersed Installations)

The following accessories are included in the ST-772 probe package for submersed installations

- One **ST-772** Dissolved Oxygen Probe with 30ft/10m Bulkhead Cable (P/N - 53703)
- One **DCC-1** Membrane Cap for ST-772 (P/N – 53712)
- One **MA-1.5CR** Cable (1.5 Meter/ 4.9 ft 8Pin Female Adapter/Flying Lead)
- One **MA-CR** Bluetooth Adapter for 8Pin Sensors
- One **MA-NEB** Bluetooth/USB Adapter for use with Desktop uPyxis APP
- The full instrument manual is available for download at www.pyxis-lab.com/support.html

ST-772T Standard Accessories (For Inline / ByPass Flow Installations)

The following accessories are included in the ST-772T probe package for inline/bypass flow installations

- One **ST-772T** Dissolved Oxygen Probe with 4.9ft/1.5m Bulkhead Cable (P/N - 53719)
- One **ST-001** Inline Tee Assembly (P/N – ST-001)
- One **DCC-1** Membrane Cap for ST-772 (P/N – 53712)
- One **MA-1.5CR** Cable (1.5 Meter/ 4.9 ft 8Pin Female Adapter/Flying Lead)
- One **MA-CR** Bluetooth Adapter for 8Pin Sensors
- One **MA-NEB** Bluetooth/USB Adapter for use with Desktop uPyxis APP
- The full instrument manual is available for download at www.pyxis-lab.com/support.html



Figure 1 ST-772-ST-772T DO Sensor / DCC-1 Membrane Cap / MA-CR Bluetooth Adapter / MA-NEB USB Adapter

ST-772 / ST-772T Optional & Replacement Accessories

| Optional / Replacement Accessories | P/N |
|---|-------|
| MA-CR Bluetooth Adapter for 8-Pin Pyxis Sensors | MA-CR |
| MA-150-1 Submersion Adapter Ball Float + Mounting Bracket for ST-772 | 53705 |
| MA-150-3 Floating Submersion Probe Adapter Assembly for ST-772 Floating / Submersed Installation | 50791 |
| MA-150-4 Optional Watertight Conduit for ST-772 – 8ft / 1" NPT Floating / Submersed Installation | 50798 |
| MA-120-B Submersion Pipe & Adapter Mounting Bracket | 50783 |
| ST-001 Inline Tee Assembly (3/4" FNPT – CPVC) | 50704 |
| DCC-1 Dissolved Oxygen Membrane Cap - Replacement | 53712 |
| MA-50CR (50' Extension Cable w/8Pin Adapters) | 50743 |
| MA-100CR (100' Extension Cable w/8Pin Adapters) | 50744 |

ST-772 Submersed Installation Options

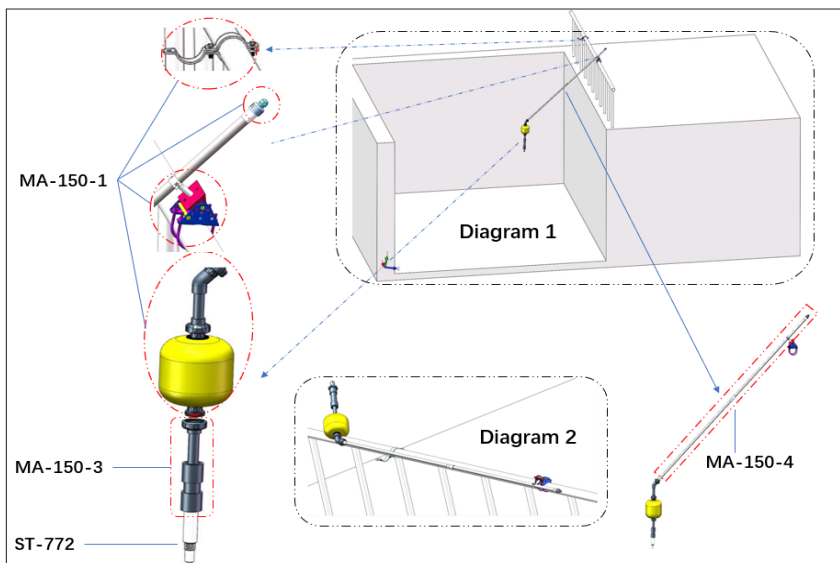


Figure 2 ST-772 in a submersed floating installation

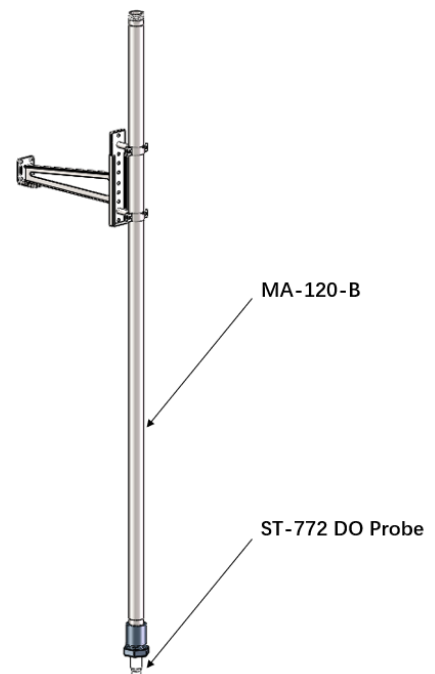


Figure 3 ST-772 in a submersed fixed installation

ST-772T Inline/ByPass Flow Installation Option

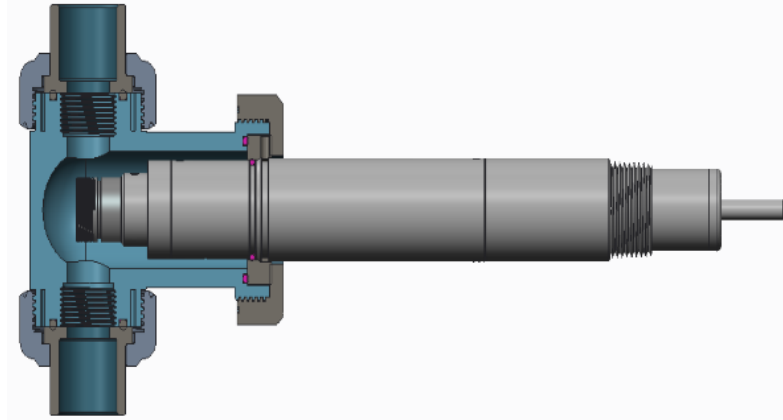
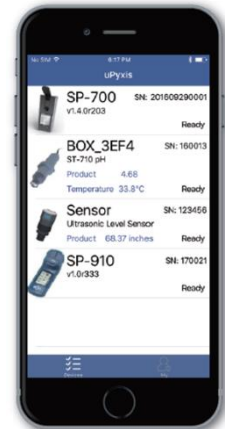


Figure 4 ST-772T in a pipeline installation includes ST-001 inline Tee Assembly

ST-772 Wireless Calibration via uPyxis APP

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 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 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/>



Order Information

ST-772 Submersed Dissolved Oxygen Sensor (0.004-20.0 ppm 4-20mA & RS-485) 53703

ST-772T Inline Dissolved Oxygen Sensor (0.004-20.0 ppm 4-20mA & RS-485) 53719

Optional Accessories Information

MA-CR Bluetooth Adapter (8Pin Adapter Enables Wireless Calibration w/uPyxis APP) MA-CR

MA-150-1 (Submersion Adapter Mount Bracket and Float Ball Assembly) 53705

MA-150-3 (Submersion Probe Assembly to Connect to Float Ball Assembly) 50791

MA-120-B (Submersion Adapter Mount Bracket & Rod Fixed Submersed Installation) 50783

DCC-1 Dissolved Oxygen Membrane Cap Replacement 53712

ST-001 (Inline Tee Assembly 3/8" NPT for ST Series Probes) 50704

UC-50 (Micro Display + Data Logger) 43007

UC-100S (Touch Screen Display + Data Logging Terminal Standard Unit) 43047

UC-100 Back Panel (UC-100 Premounted on Back Panel) UC-100 Panel

MA-50CR (50 foot Extension Cable w 8Pin Quick Adapters) 50743

MA-100CR (100 foot Extension Cable w 8Pin Quick Adapters) 50743