

ST-540 Series

NDSA Inline Fluorometers

For Research Use in Industrial Water Treatment

Description

Many companies in the water treatment industry have expressed a desire to evaluate this unique fluorescent tracer for high pressure boiler water tracing applications. The ST-540 Series are inline fluorometers designed for those desiring to conduct research and development of NDSA traced boiler or process water treatment programs. The ST-540 Series offer direct measurement of NDSA (Napthenic Disulfonic Acid CAS# 1655-29-4) utilizing LED light sources for use in boiler water and boiler feedwater measurement applications.

The ST-540 Series offers Pyxis proprietary algorithms to determine the concentrations of NDSA in a range of 0-500ppb while simultaneously measuring light loss through the optical channel to determine sensor cleanliness. The ST-540 Series offer a combination of 4-20mA as well as RS-485 Modbus output signals and is Bluetooth Enabled for wireless cleanliness diagnostics and calibration when used with MA-WB or PowerPACK Series Bluetooth Adapters and the uPyxis APP for Mobile or Desktop devices. The ST-540 Series is provided in both UPVC and 304 stainless steel for use in a cooling/process water or cooled/pressurized sample (<120°F) of boiler water or boiler feedwater. Each sensor is provided with a 1.5m bulk-head cable with 7-Pin quick adapter and 1.5m flying lead cable with 7-Pin quick adapter, enabling rapid wiring to any microprocessor controller, PLC or DCS system. The MA-WB Bluetooth adapter may be inserted between ST-540 sensor cable and flying lead cable to enable wireless access for use with the uPyxis Mobile or Desktop APPs for diagnosis and calibration.

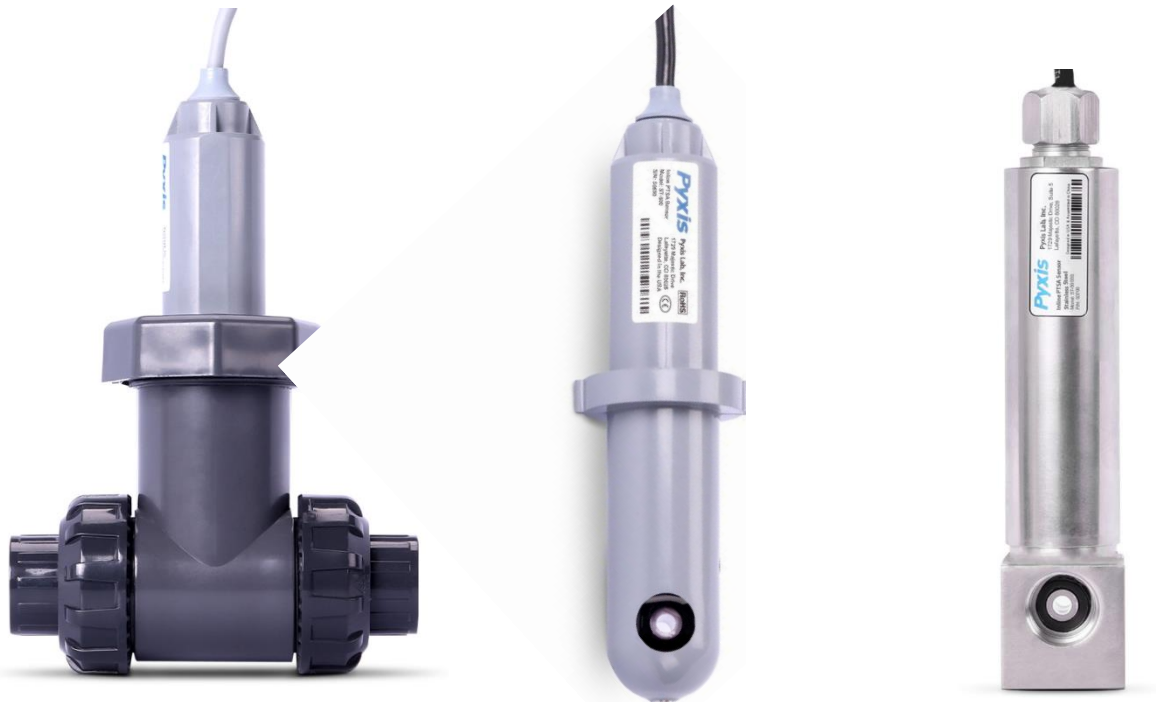


Figure 1 – ST-540A (UPVC) and ST-540SS (304-SS) Inline NDSA Fluorometers

Specifications

| Item | ST-540SS | ST-540SS-N | ST-540A |
|---|--|---------------------------------|-------------|
| P/N | 50667 | 50694 | 50621 |
| Fluorescein Output Scale <i>4-20mA Default</i> | 0-500ppb | 0-20ppb | 0-500ppb |
| 4-20mA SPAN <i>Adjustable via uPyxis</i> | 20mA SPAN Value May Be Adjusted to a lower value if desired via uPyxis APP | | |
| NDSA Resolution | +/- 1.0 ppb | +/- 0.1 ppb | +/- 1.0 ppb |
| Calibration | Two Point Calibration Against DI Water + NDSA Standard Solution | | |
| Power Supply | 12-36VDC, Power Consumption – 1W | | |
| Outputs | Isolated 4 – 20 mA Analog Outputs & Isolated RS-485 Digital Output -7Pin | | |
| Installation | ¾" FNPT Threaded Ports | ST-001 Inline Tee Assembly (¾") | |
| Weight | 2.5lbs (1,148g) | 0.37lbs (170g) | |
| Operational Pressure | 290 psi (20 Bar) | 100 psi (6.9 Bar) | |
| Operating Temperature | 4 °C – 49 °C (40 – 120 °F) | | |
| Storage Temperature | -20 °C – 60 °C (-4 – 140 °F) | | |
| Material | 304 Stainless Steel | UPVC | |
| Rating | IP67, Fully Dustproof & Waterproof | | |
| Regulation | CE Marked + RoHS | | |
| Dimension (L x W x H) | Length 6.8 inch (172.7 mm), body diameter 1.44 Inch (36.6 mm) | | |
| Cable Length | 1.5meter terminated w/IP67 adapter + 1.5meter flying lead w/IP67 adapters | | |

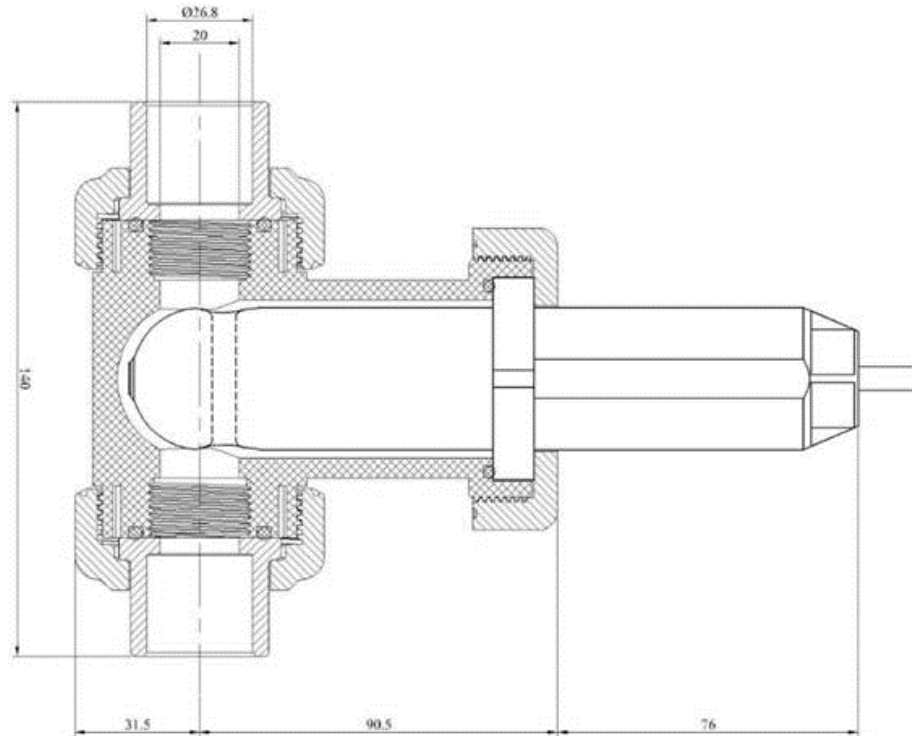
**NOTE* Specifications are subject to change without notice.*

Optional Accessories Information

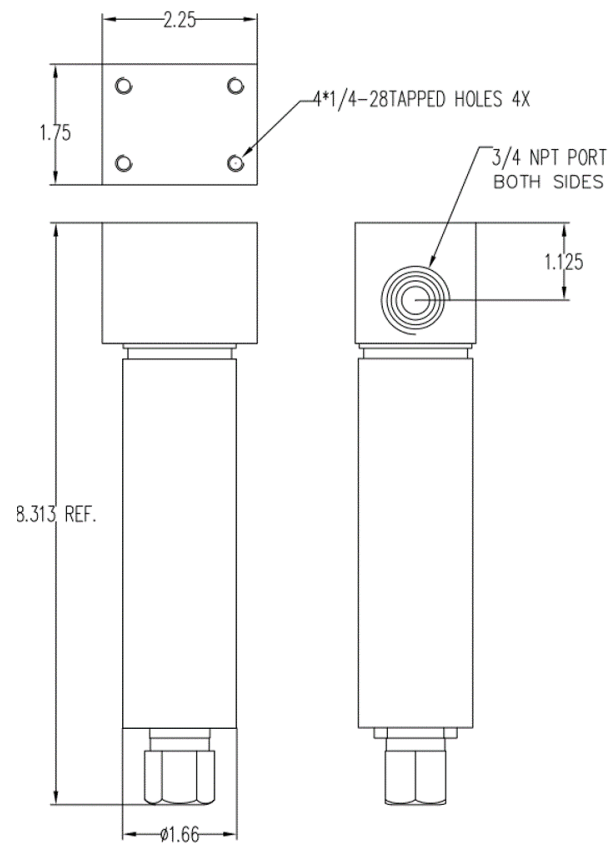
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| | |
|---|----------|
| ST-001 Inline Tee Assembly Spare (<i>3/4" FNPT Inline Tee Assembly</i>) | 50704 |
| NDSA-10 (<i>NDSA Calibration Standard 10ppb / 500mL</i>) | NDSA-100 |
| NDSA-100 (<i>NDSA Calibration Standard 100ppb / 500mL</i>) | NDSA-100 |
| Pyxis Probe Cleaning Kit (<i>Includes Sensor Cleaner 500mL + Accessories</i>) | SER-01 |
| MA-WB Bluetooth Adapter (<i>Pyxis Bluetooth Adapter for 7Pin Pyxis Sensors</i>) | MA-WB |
| MA-NEB Bluetooth/USB Adapter (<i>Enables Bluetooth for Desktop and uPyxis APP</i>) | MA-NEB |
| PowerPACK-1 (<i>Single Chanel Auxiliary Power Supply w/Bluetooth For Pyxis Sensors</i>) | MA-BLE-1 |
| PowerPACK-4 (<i>Four Chanel Auxiliary Power Supply w/Bluetooth For Pyxis Sensors</i>) | MA-BLE-4 |
| SP-395N Handheld NDSA Analyzer (<i>NDSA 0-100ppb</i>) | 50226 |
| MA-C10 (<i>10' Extension Cable for 7Pin Pyxis Sensors</i>) | 50738 |

ST-540A and Inline Tee Assembly Diagram (mm)



ST-540SS Diagram (in)



Cleaning and Calibration

Pyxis Lab recommends cleaning and calibrating the ST-540 Series inline sensors at a minimum frequency of once per month. For clean water applications this period may be increased. For heavily contaminated applications, diagnosis, cleaning and calibration may be considered more frequently. The ST-540 Series sensors contain internal hardware and algorithms that enable sensor cleanliness diagnostics. When powered by and connected to the MA-WB (7Pin) or PowerPACK Series Bluetooth Adapter options, the ST-540 Series sensors can both be wirelessly accessed via Bluetooth from any mobile or desktop device using the **uPyxis APP**. The APP features a live graphical display of the sensors value outputs for NDSA as well as a sensor cleanliness check and calibration function. The cleanliness check can be conducted rapidly to determine if a cleaning is required prior to sensor calibration. Once the sensor is properly cleaned it can be re-diagnosed to confirm the cleaning was effective and then calibrated with its Pyxis Calibration Standard (i.e. NDSA-100). Contact service@pyxis-lab.com for support.

Instructional videos on this and other Pyxis devices can be found at



<https://www.youtube.com/channel/UC8RqYgnwL-Vzu2TRzraqrUw>



Calibration and diagnostics made easy with the uPyxis APP

