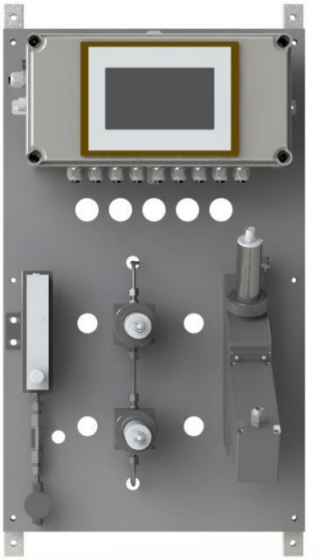
WQMS-2000 Series

Administration Instruction Guide



This document provides a descriptive guide to the administration access interface within the Pyxis WQMS-2000 Series inline analyzer for Ozone, pH, Conductivity, Turbidity and Temperature. Administration level access allows administrators to adjust key performance response and calibration parameters of the ST-765SS-O3 sensor based on critical to quality process requirements in the application of use.

Administration Login

After powering on the system, administrators may log in with a specific username and password to change the system settings. Click the "**User Login**" button, select the user "**pyxis-Admin**", enter the password: "**666666**" in the user password field. This entry mode enables access to hidden features within the administration level only.

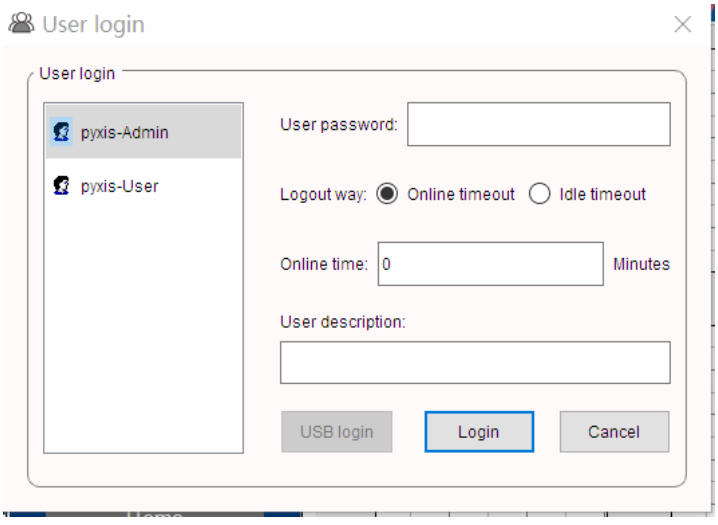


Figure. 1 - User Login Screen

Sensor Settings

Touch the left side of the admin screen interface to show the main menu. Tap on the “Parameter” button then tap “Sensor Settings” and then “O3 Setting” for access to administrative adjustment of sensor data averaging and calibration slope settings.

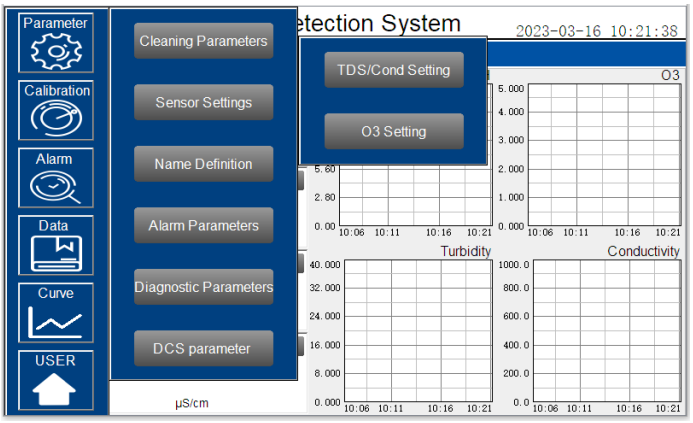


Figure. 2 Parameter Screen

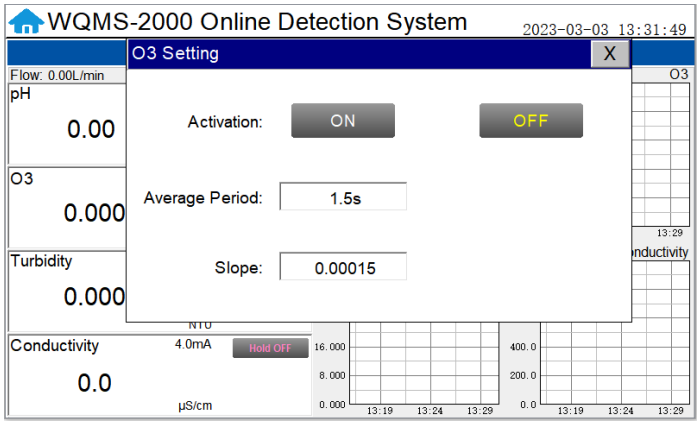
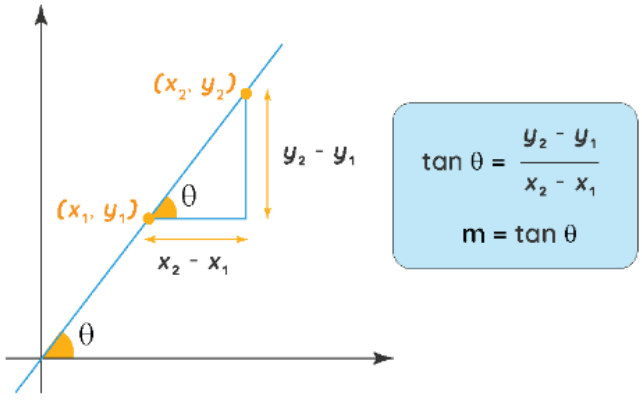


Figure. 3 Sensor Settings Screen

Average Period: Average period allows the administrator to adjust the Pyxis sensor data averaging. The longer the set time for average period, the longer the T90 response time of the sensor will be.

Slope: Slope is the coefficient of the sensor (Δy/Δx) that will change when the sensor is calibrated. The sensor slope can be directly entered as a coefficient to change the accuracy of the sensor while in administration access mode.



Zero Calibration

"**User Login**" mode allows operators to only perform a Single-Point calibration.

In the "**Admin Login**" mode, administrators can perform a two-point calibration on the ST-765SS-O3 including Zero and High-Point calibration.

The measurement module of the ST-765SS-O3 sensor is thoroughly calibrated at the Pyxis Lab factory. To calibrate, the user can perform a single-point or two-point calibration according to the requirements of the application. (USEPA-334.0 / ISO-7393 compliant methodology).

Single Point Calibration

Use a portable or laboratory colorimeter (ie. Pyxis SP-200 / SP-800 / SP-910 or similar) to test the active (flowing) water sample in the flow tee assembly. DPD wet chemistry or Indigo vacuum ampule methodology is recommended. Once you have tested and confirmed the concentration value in the active (flowing) flow tee assembly, enter the test result value of the colorimeter in the O3 Calibration Screen and click "High Point Calibration". A dialog box will pop up to confirm whether to perform this operation. If the calibration operation is confirmed, click "OK", and if the calibration is successful, the dialog box will show "Calibration Success".

Two Point Calibration

The intercept in the ST-765SS-O3 sensor concentration formula is non-zero from the Pyxis Lab factory, however the user can prepare a blank calibration to correct the intercept in the concentration formula according to application needs.

Blank Calibration Procedure:

To achieve blank calibration of the ST-765SS-O3 sensor, close the water inlet valve, remove the ST-765SS-O3 sensor and gently rinse sensor electrode with deionized water 2-3 times. Install the sensor into a beaker with the known zero calibration solution (Pyxis ZERO Oxidizer Standard P/N 20022) or Conductivity Standard Solution (100 uS/cm), wait for the ST-765SS-O3 sensor value to stabilize on the touch-screen display. Sensor stabilization should occur within 15-minutes. Click "Zero Calibration" and a dialog box will pop up confirm whether your desire to perform this operation. Click "OK" to confirm the calibration operation. If the calibration is successful, the dialog box will show "Calibration Success". The sensor is now blank-calibrated to the known zero calibration solution.

Slope Calibration Procedure:

Use a portable or laboratory colorimeter to test the active (flowing) water sample in the flow tee assemblies. DPD wet chemistry or Indigo vacuum ampule methodology is recommended. Once you have tested and confirmed the concentration value in the active (flowing) flow reservoir, enter the test result value of the colorimeter in the O3 Calibration Screen and click "High Point Calibration". A dialog box will pop up to confirm whether to perform this operation. If the calibration operation is confirmed, click "OK", and if the calibration is successful, the dialog box will show "Calibration Success".

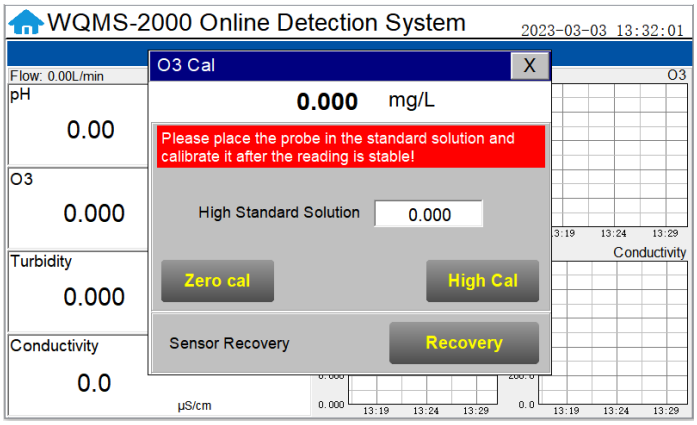


Figure. 4 - O3 Calibration

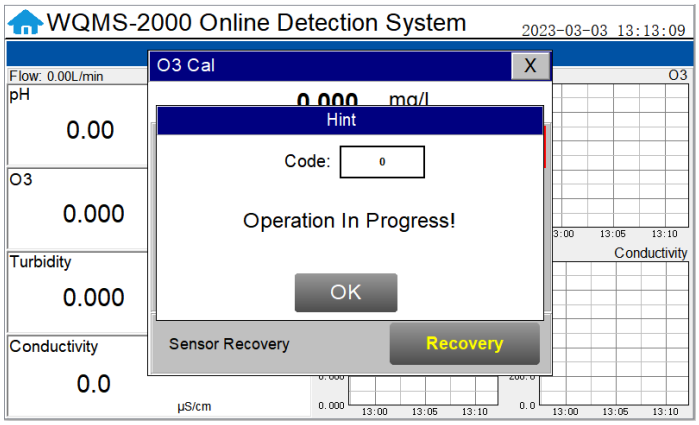


Figure. 5 - Awaiting execution screen of O3 Calibration

Explanation and use of the HOLD Feature

Within the ADMIN USER ENTRY level, the WQMS-2000 series have an integrated HOLD feature for all Modbus TCP output parameters from the sensor that would be connected to an onsite DCS network. The purpose for this feature is to allow the user to enter a signal value HOLD on the designated parameter during periods of sensor maintenance or removal. This feature prevents network system alarms from operational shutdown during sensor maintenance or replacement.

Click the "**Hold OFF**" button on the main interface to enter the HOLD setting interface.

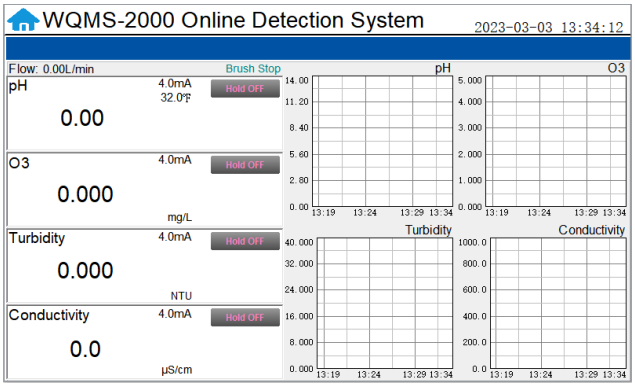


Figure. 6 - Main interface

In the pop-up box, enter the parameter value and click "**Confirm**" to open the "**Hold ON**" function. The main interface will display the entered value for 15 minutes, after which it will resume displaying the real-time value read by the sensor.

When the "Hold ON" function is activated by the user, the sensor may be maintained, calibrated, or removed and the Modbus TCP output will continue to retain the user entered value for a period of 15 minutes, ensuring network alarm and process will not be interrupted due to the sudden disappearance of the 'normal' value. The 'actual' live sensor reading along with the user entered hold value reading will both be displayed during this period.

Clicking "**Cancel**" will turn off this function, the main interface will immediately display the real-time value read by the sensor, and the main interface button will be displayed as "**Hold OFF**".

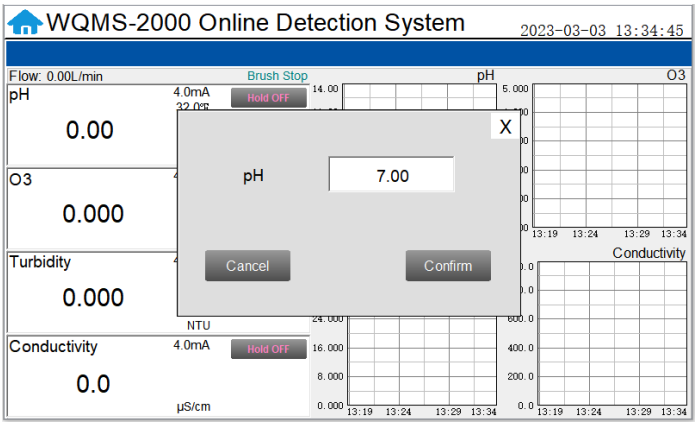


Figure. 7 - Hold Feature - pH Value Entry by User

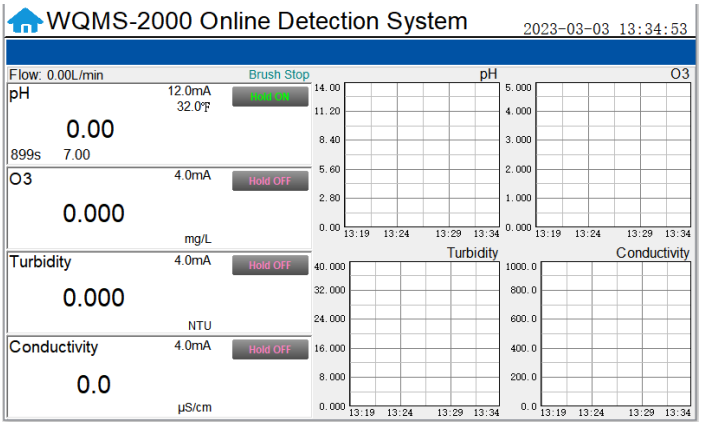


Figure. 8 - Hold ON interface