Operation Manual
Pulse Controller
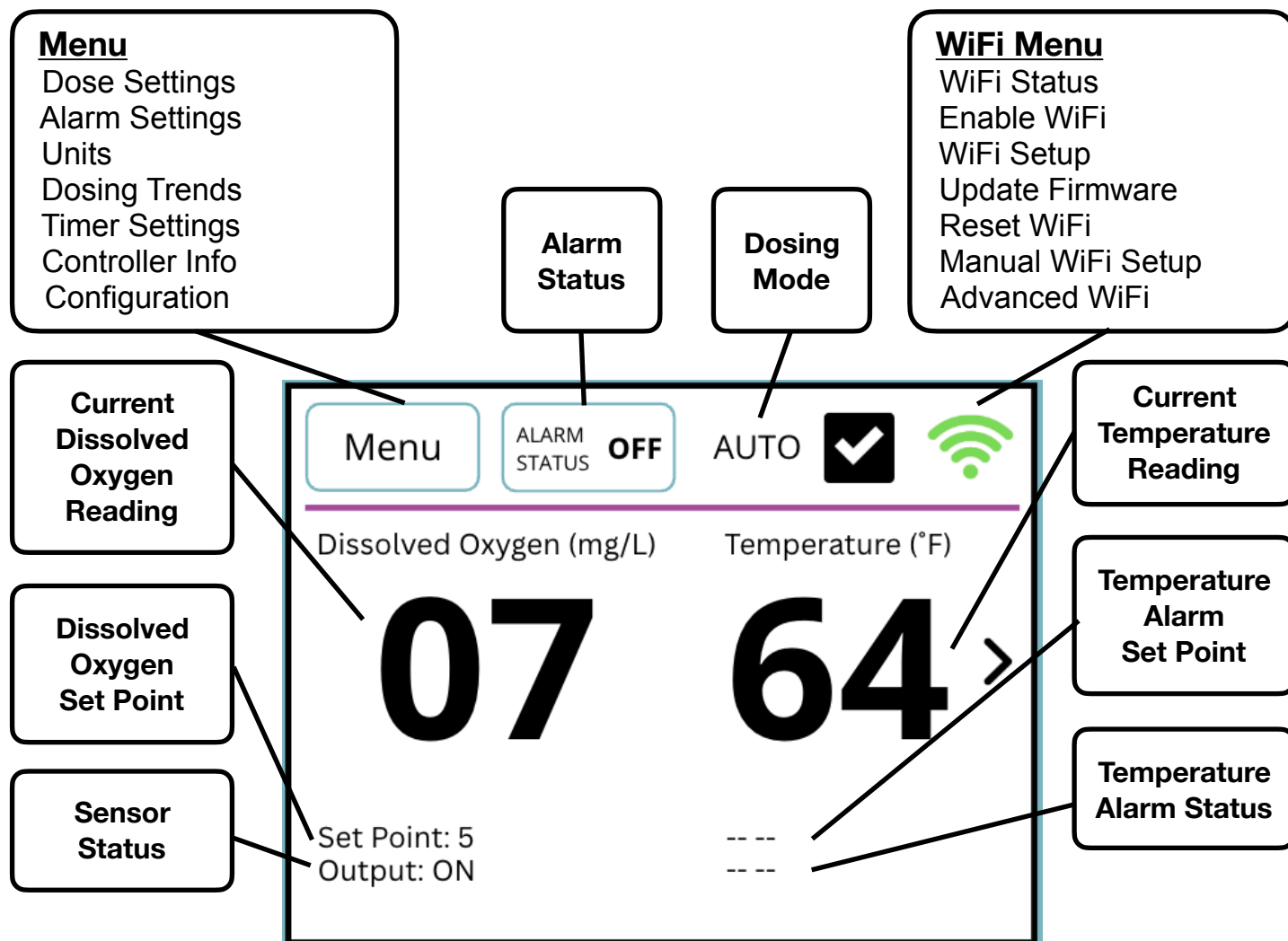
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Introduction

This manual covers the operation of the Pulse controller designed to be used in conjunction with a dissolved oxygen system. The Pulse is a touch screen controller that utilizes input from a sensor to automatically dose dissolved oxygen. The Pulse is compatible with the Sensorex and Hamilton dissolved oxygen sensors.

Precautions

• The controller is used to control outputs to a dissolved oxygen system; it is not a safety device.

• Do not operate the controller in temperatures above 160℉.

• The controller contains electronic components which are sensitive to static electricity. Before handling the controller dissipate any static charge you may have by touching metal or a screw on the controller panel, the electrical box, or some other grounded object.

• Always check the position of the sensor and temperature probes to ensure best results.

Home Screen Overview

Menu
Dose Settings
Alarm Settings
Units
Dosing Trends
Timer Settings
Controller Info
Configuration

WiFi Menu
WiFi Status
Enable WiFi
WiFi Setup
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Reset WiFi
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Alarm Status

Dosing Mode

Current Dissolved Oxygen Reading

Current Temperature Reading

Dissolved Oxygen Set Point

Temperature Alarm Set Point

Sensor Status

Temperature Alarm Status

Menu | ALARM STATUS OFF | AUTO ✓ | 📶

Dissolved Oxygen (mg/L)   Temperature (℉)

07   64 >

Set Point: 5
Output: ON

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Quick Start Menu

Need to get your dissolved oxygen controller up and running fast? These three steps are all you need to start using your controller immediately.

1. **Sensor Connection**
Ensure your sensor is connected correctly and showing valid readings on the home screen for the dissolved oxygen current value.

2. **Dosing Configuration**
Go to Menu > Dose Settings. Enter values for the O2 Set Point and Dose Time.

3. **Dosing Mode**
Go to Menu > Dose/Delay Mode. Set this to auto.

You're all set! Ready to move onto more advanced configuration? Full details are found in the Menu details as well as our Advanced Settings section.
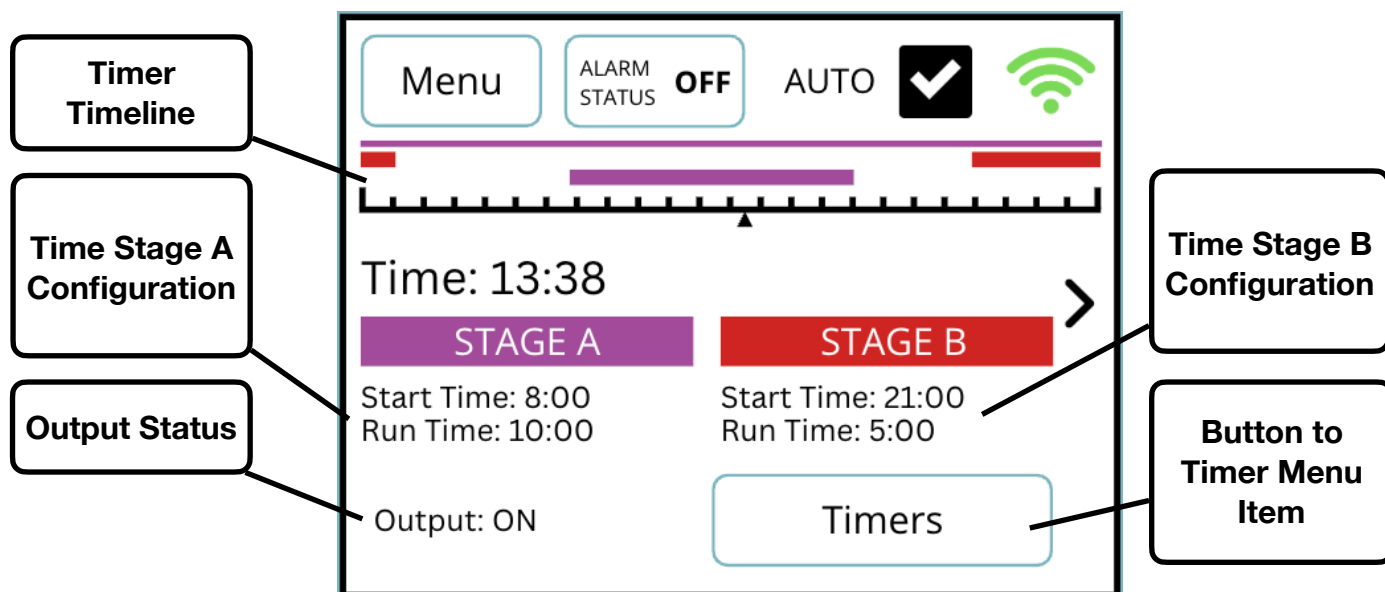
Details Screen

Press the right arrow to see details for current data readings including: temperature, saturation, dissolved oxygen sensor levels and alarm status.

Timer Screen

Press the right arrow from the Details Screen to see the timer status.
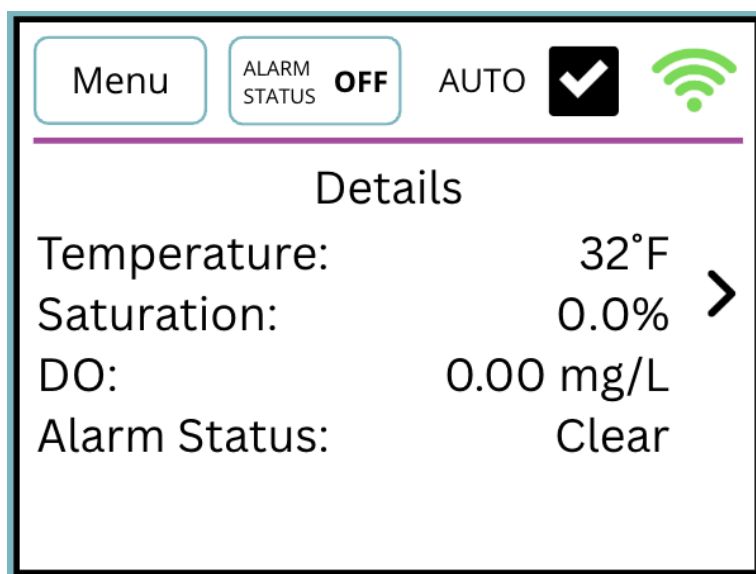
Details Screen

Timer Screen

Advanced Settings

Ready to make the most out of your dissolved oxygen controller? Here are some advanced settings that can be used on top of automatically dosing above dosing set point.

1. Delay Functionality
   Is your dosing equipment activating too quickly? Using the dosing delay helps eliminate an irregular reading or cycling the output frequently.

2. Alarms
   Setting up alarms is a good way to ensure your environment stays within your desired parameters. The alarm is set with a minimum of 2,000 ppm and a high of 200,00.

3. Timers
   You can enable dosing at certain periods of the day by utilizing the controller's two-stage timers. These timers allow you to set a start and run time - during which the dosing parameters will be used to automatically dose throughout the stage. If the timers are not set, the controller will use the dosing parameters continuously.

Menu

Dose Settings

Dose/Delay Mode

This mode has options of On, Off and Auto. If it is set to On, dosing will happen continuously. Auto will dose if the dissolved oxygen sensor reading is below the O2 set point. Off will not dose.

O2 Set Point

Enter the set point threshold that dosing will occur under. Units are in mg/L. Default value is 5.

Dose Time

Enter the amount of time to dose when the current O2 levels are under the set point. Required format is hh:mm. Defaults to 00:00.

Dose Delay

Enter the amount of time to wait before dosing when the O2 levels are under the set point. Required format is hh:mm. Defaults to 00:00.

Alarm Settings

Clear Alarm

Clears an active dosing alarm for X minutes

Alarm Toggle

Enable or disable the alarm output.

Alarm Delay

Enter the amount of time to wait before an alarm will activate. Required format is hh:mm.

Alarm Set Pt Low

Enter the value in mg/L for the low alarm set point. The controller alarm will activate if the sensor reading is below the low alarm value. Allowable values are 1-50. Default value is 2 (or 2,000mg/L).

Alarm Set Pt High

Enter the value in mg/L for the high alarm set point. The controller alarm will activate if the sensor reading is above the high alarm value. Allowable values are 1-50. Default value is 40 (or 40,000 mg/L).

Relay Activation

Shows the status (On/Off) of the following:
- High Alarm
- Low Alarm
- Manual Override

Units

On Units

Shows the current reading from the dissolved oxygen sensor in ppm/mgL.

Temperature

Shows the current reading from the temperature sensor.

Dosing Trends

All dosing trends listed are reset when on a power cycle.

Max ppm

Lists the maximum parts per million reading.

Max mg/L

Lists the maximum milligrams per liter reading.

Max Temp.

Lists the maximum temperature reading.

Min ppm

Lists the minimum parts per million reading.

Min mg/L

Lists the minimum milligrams per liter reading.

Min Temp.

Lists the minimum temperature reading.

Min Sat.

Lists the minimum saturation reading.

Total Alarms

Lists the total alarms sounded.

Timer Settings

Start A

Enter the start time for the A stage. Required format is hh:mm.

Run A

Enter the run time for the A stage. Required format is hh:mm.

Start B

Enter the start time for the B stage. Required format is hh:mm.

Run B

Enter the run time for the B stage. Required format is hh:mm.

Controller Info

Contains the firmware version plus the serial number and mac address for registering and viewing your controller through the app. Updating firmware will NOT affect the current settings.

Configuration

UI Theme

This menu option allows you to choose the color scheme for your controller. There are 5 color combination options. Each combination can be shown in light, dark or solid mode. Simply press the color and mode you prefer for your controller. Defaults to dark mode.

Set Clock

Set up the 24 hour clock with this menu option. Required format is HH:mm. This value must be correct for the timer to start and run each stage correctly.

WiFi

To set up Wi-Fi for the Spark, press "WiFi" and the controller will scan for nearby networks. Select your desired network and enter the password (if required) and press "Save".

Calibrate Touch

Used to re-calibrate the touch screen if buttons aren't working properly. Press the "Calibrate Touch" button and follow the onscreen instruction to re-calibrate.

Software Reset

Use this option if you need to restart your controller for any reason. Factory Protected

WiFi Menu

WiFi Status

This menu option displays the WiFi network the controller is connected to, WiFi signal strength and if it is connected to the Cloud API.

Enable Wi-Fi

Enable or disable the Wi-Fi feature. **Off** turns Wi-Fi capabilities off at all times. **On When Firing** enables Wi-Fi only when a firing is in progress. **Always On** turns the Wi-Fi on anytime it is within range of a setup Wi-Fi connection.

WiFi Setup

To set up Wi-Fi for the Genesis, press "Wi-Fi Setup" and the controller will scan for nearby networks. Select your desired network and enter the password (if required) and press "Save".

***For security reasons, we highly recommend that the user place all controllers into a separate logical network or VLAN, separate from other networks, routers, and hardware.

Update Firmware

If your controller is connected to the internet through the WiFi module, by pressing Download Firmware, you will connect to our API to see if any updates are available. Once it has found the firmware, you have the option to update your controller. Updating firmware will **NOT** affect the firing programs.

Reset WiFi

Press Reset WiFi when having trouble with the WiFi connection. The controller will reset the WiFi connection and attempt to reconnect to your currently saved connection.

Manual WiFi Setup

Used to manually set up a WiFi network that is hidden or otherwise not found when running WiFi Setup. Enter the network name under SSID and press "Save". Under password, enter the network password at press "Save".

Advanced WiFi

Used for network administrators this information can be used when firewall settings need adjusted to allow the controller to communicate with the KilnAid app.