

FLEX - Single Phase, Duplex

Model: FLXO1D | Opaque Door, Beacon

QSG00380_Rev04_FLEX Opaque Door Beacon 1P Duplex FLXO1D Series.pdf | September 13th, 2023 7:23am



Introduction

The Flex Control Panel Duplex is a control panel capable of controlling and monitoring two pumps and five sensor inputs. It can be configured as a five float panel, or as a four float + one transducer panel. Additionally, it features pump seal fail sensor inputs, auxiliary cutout inputs, and optional current sensor inputs for each pump. Pump mode control (hand mode, off mode, and auto mode) are controlled via buttons on the inner front door of the control panel. For controlling the pumps, the panel can be equipped with either contactors or with a cost saving replaceable power relay board. The Flex Control Panel can be configured for demand dose or time dose control. An auxiliary dry contact output is also included for interfacing to remote alarms or to building automation systems. This panel also features a menu system to enable maximum field configuration as well as thorough statistics tracking. Finally, the panel can be connected to Vizzysite for remote tracking, control, and configuration.

Before Installation

Before proceeding with the installation or operation of the control panel read all instructions thoroughly, as well as comply with all Federal, State and Local Codes, Regulations and Practices. The control panel must be installed by qualified personnel familiar with all applicable local electrical and mechanical codes. Refer to the National Electrical Code (NFPA 70). Failure to properly install and test this product can result in personal injury or equipment malfunction. All conduit connected to the panel must be sealed with conduit sealant to prevent moisture or gases from entering the panel. NEMA 1 enclosures are for indoor use only while NEMA 4X panel enclosures may be used indoor or outdoor. Refer to panel model name plate on inside of door for enclosure rating. Note: If options are ordered that affect the number of floats, refer to the panel schematic for complete information.

Safety Guidelines



1. DO NOT USE WITH FLAMMABLE OR EXPLOSIVE FLUIDS SUCH AS GASOLINE, FUEL OIL, KEROSENE, ETC. DO NOT USE IN EXPLOSIVE ATMOSPHERES. CONTROL PANEL SHOULD ONLY BE USED IN WATER AND WASTEWATER APPLICATIONS THAT ARE NOT RATED AS A HAZARDOUS LOCATION.
2. DO NOT WORK ON THE CONTROL PANEL WITH LIVE VOLTAGE APPLIED TO THE CONTROL PANEL WITH WET HANDS OR WHEN STANDING ON A WET SURFACE.
3. DISCONNECT ALL ELECTRICAL SERVICE BEFORE WORKING ON OR HANDLING THE CONTROL PANEL

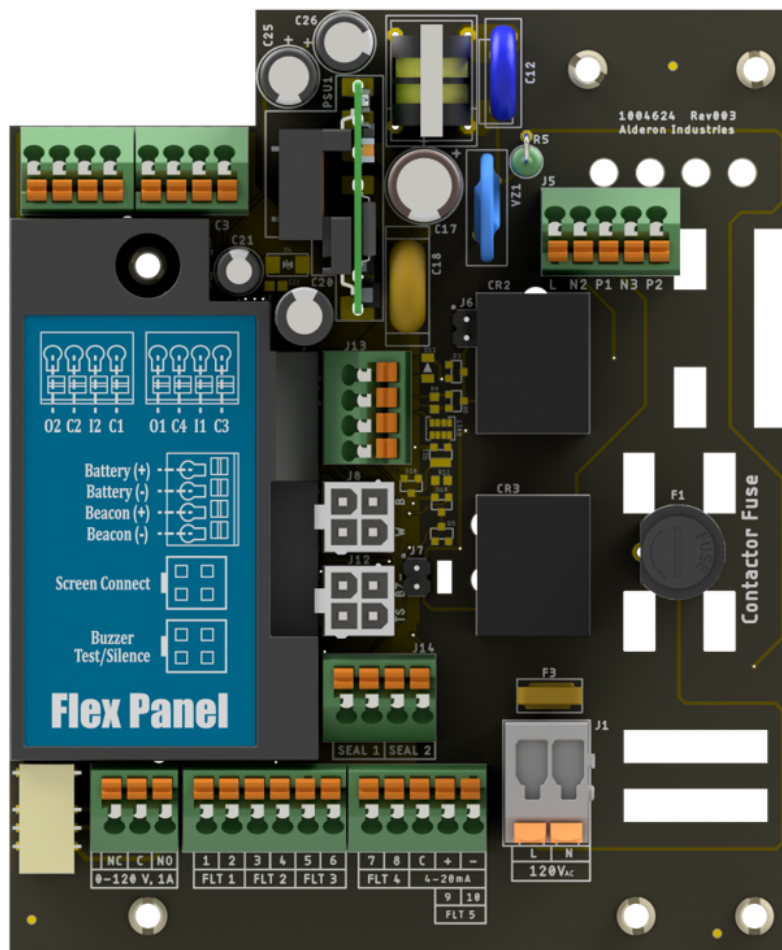
4. INCOMING VOLTAGE MUST MATCH THE CONTROL PANEL VOLTAGE. REFER TO THE PANEL SCHEMATIC FOR COMPLETE INFORMATION.

Input Wiring

General Wiring

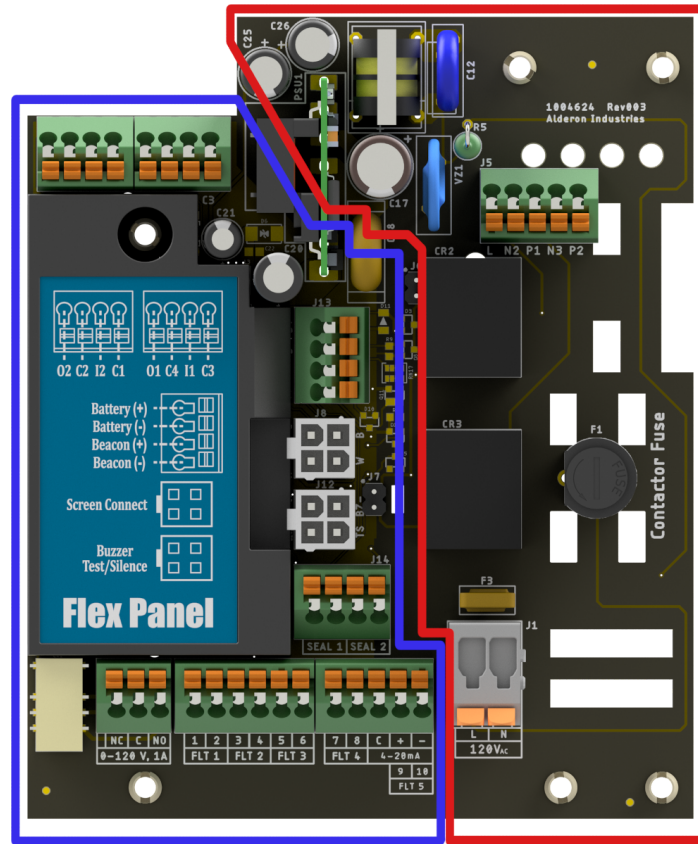
The Flex Control Panel inputs are located on the bottom side of the circuit board shown below. The inputs are numbered FLT 1 - 5 as labeled on the circuit board. To wire a float, simply connect the float wires to their assigned inputs; polarity does not matter unless the floats share a common (see Wiring Inputs With Common Float Connections for further details). If using Input 5 in transducer mode, wire the positive wire of the transducer into (+), the negative side into (-) and the shielding cable (if provided) into (C).

If using the Seal Sensors, note that the right side terminal of the Seal input is a ground connection and the left side is the probe connection. If using a single wire seal probe, connect it to the left terminal. If using a two wire probe, make sure that if one of the wires is a ground connection that it's connected to the right side and the signal wire to the left side.



Input Voltage Levels

All of the signal inputs of the Flex Control Panel are low voltage, low power circuits and are electrically isolated from the incoming line power. This isolation MUST be maintained. Therefore, the Neutral of the incoming power must NOT be connected to the secondary (low voltage) side of the circuit board.



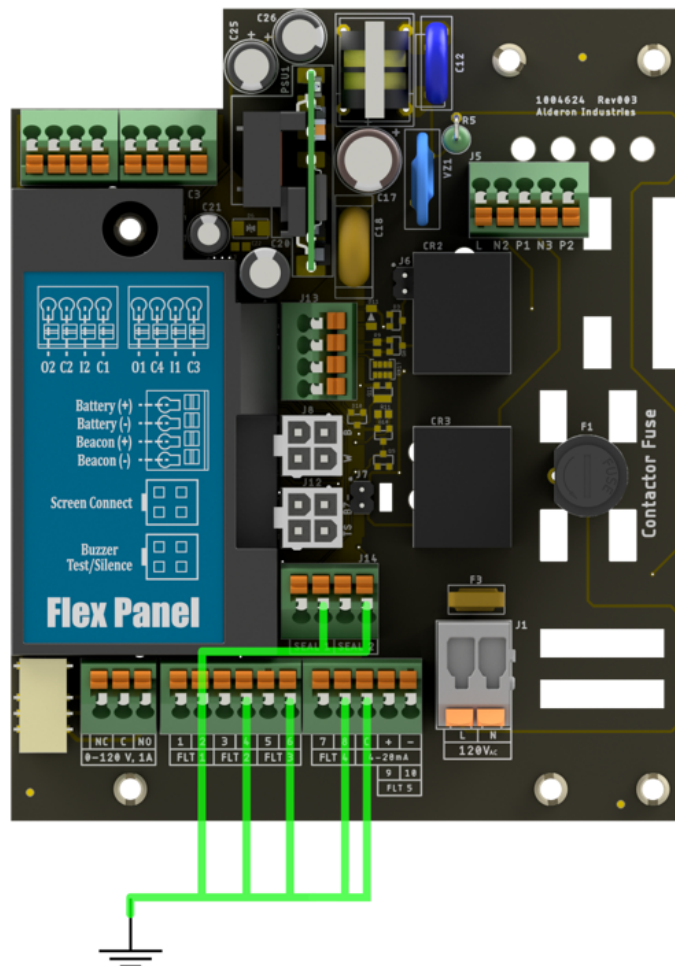
Isolated Low Voltage Side High Voltage Side

Wiring Inputs With Common Float Connections

If the application requires it, every input EXCEPT input 5 can be wired with a common ground connection. The figure below shows how the input grounds are connected internally. The ground connection for each input is the right side terminal (terminal 2 for FLT 1, for example). The signal connection for each input is on the left side (terminal 1 for FLT 1, for example). If connecting floats with a single common, connect the common wire into one of the ground inputs and the signal wires to each signal input as normal. Note that wiring a ground connection into a signal pin will result in the input being permanently tripped.

NOTE: Input 5 MUST be separated from the other inputs due to the circuitry for the transducer functionality. Therefore, if this input is being used in Float mode the float wires must be wired into the (+) and (-) terminals.

NOTE: The ground connection of the Circuit Board is connected to the panel's backplate and is thus earth ground. The earth ground connections from the incoming power sources must be connected to the provided backplate grounding points to ensure proper panel operation.



Auxiliary Dry Contact

The Flex Circuit Board features a single auxiliary dry contact output with both normally open and normally closed contacts. This auxiliary output will activate on any alarm condition. Additionally, the normally open and normally closed contacts can be optionally reversed so that the contact is normally energized when the system is powered and idle. This allows power losses to be detected with the normally closed contact.

Menu System

Interface

The user interface of the Flex Control Panel comprises a 16x2 OLED display, three RGB indicator LEDs, and a rotary knob (scroll wheel) used to navigate the menu system. While the system is idle, the menu screen will be turned off to conserve the life of the display. To wake it up, simply make any input on the menu navigation knob.

Navigating the Menu

The scroll wheel is used to operate the menu system. This includes navigation, configuration inputs, alarm clears, and so on. Below is a table summarizing the interface to the menu system.

| Action | Result |
|---------------------------------------|--|
| Pressing the Knob | Navigate Forward, Select, Commit a Change, Clear an Alarm |
| Scrolling Clockwise | Navigate to the Right, Increase a Config Value |
| Scrolling Counter-Clockwise | Navigate to the Left, Decrease a Config Value |
| Activating Test/Silence Switch | Cancel Input; Silence Alarm; Exit Menu; Start Test Routine |

Test/Silence Switch Note





The Test/Silence switch on the side of the panel can be used to:

- ▶ Silence the buzzer
- ▶ Cancel user inputs
- ▶ Exit the menu system
- ▶ Start an indicator test routine

There are different priorities for each of these functions, so sometimes up to three presses of the test/silence switch may be needed to get the desired result. The first press will always silence the buzzer (if active) and cancel any inputs (if active); the next press will exit the menu system; the final press will activate the test routine.

Menu Conventions

There are a set of arrow indicators that will appear on the bottom line of the display to aid with menu navigation. Below is a table summarizing these indicators:

| Indicator | Image | Meaning |
|--|--|--|
| Right Arrow on Bottom Right |  | The user can navigate forward or select a config from here. Press the scroll wheel to take this action. |
| Left Arrow on Bottom Right |  | The user can navigate backwards from here. Press the scroll wheel to take this action. |
| Blinking Right Arrow on Bottom Left |  | A config is being modified when this is shown. Scroll the wheel to change the config. Press the scroll wheel to commit the change. To cancel the input, either wait for the timeout OR press the test/silence switch to exit the menu. |
| Enter Arrow on Bottom Right |  | This arrow indicates a config can be committed. Press the knob to commit OR cancel the input as described in the entry above. |

To Change a Setting

Configurations on the Flex Control Panel are organized into a config path type structure similar to a file path on a computer. All configuration "paths" are of the type shown below.



All configurations are located behind the password in the menu. After the password, configurations are organized into groups, sub-groups, and individual configurations. The config "path" for every configuration is displayed in the table in Available Settings.

- ▶ **NOTE: To cancel an input, press the test/silence switch on the side of the panel. This will cancel any active input and let you re-enter the setting. This will also cancel the Setup Wizard (detailed below) and let you start over.**

Please see the Settings section of this document for an exhaustive list of all available configurations.


To Clear an Alarm

To clear an alarm, simply scroll to it in the main screen (or press the test/silence switch until you see the system status screen) and then press the rotary knob. A confirmation screen will appear and ask if the alarm should be cleared. Press the knob again to clear the alarm.



Note that if the alarm immediately re-activates and the buzzer activates again, this means that the alarm condition is still present and the system cannot clear the alarm. If this happens, check for the source of the alarm.

Quick Setup Guide

This section will cover all of the information needed to get a panel up and running for its specific application. It will cover running the Setup Wizard, which will configure the most important configurations, as well as several examples of optional configurations that can be used to customize the application. An exhaustive list of configurations can be found in the Settings section of the Wiki (<https://wiki.aind.co/> ).

System Setup with the Setup Wizard

The Setup Wizard will set the critical system configurations and get a system up and running quickly. It will configure all inputs as well as basic pump configurations. **Refer to the panel schematic to see what each input will be configured as by default.**

- ▶ **NOTE:** The Setup Wizard can be restarted at any point in its execution by pressing the Test/Silence switch once.

Step 1

Run the Setup Wizard by following the menu path shown below.



This will configure all of the primary configurations for the panel, including:

- ▶ Dosing Type
- ▶ Transducer Configurations
- ▶ Float Configurations
- ▶ Pump Current Monitoring Configurations (only on models with current sensing)

Step 2 (In Setup Wizard)

Set Dosing Configuration. This configures the system for Demand Dosing or Time Dosing. **Note: this is the only way to change this setting.**

In Demand Dose Mode, if the start float triggers the pump will run continuously until the stop float goes down.

▶  DOSE CONFIG
→DEMAND DOSE


In Time Dose Mode, when the timer enable float triggers the system will time dose until the timer enable float goes down. If this option is selected, the system will ask the user to configure all of the dose time information.

▶  DOSE CONFIG
→TIME DOSE

Step 3 (In Setup Wizard)

Enable or Disable the Transducer Input This will configure Input 5 to be either a 4-20 mA pressure transducer or a regular float input.

If the transducer is enabled, the system will then ask the user to enter the basic transducer configurations.

▶  TRANSDUCER
→ENABLED

If the transducer is disabled, the system will skip the transducer configuration options.

▶  TRANSDUCER
→DISABLED

Step 4 (In Setup Wizard)

Configure the Float Inputs. This will configure the float inputs of the system.

If the transducer was enabled, the system will ask whether or not a 2-float backup should be activated. This will set a Low Alarm/Redundant Off Float and a High Alarm/Redundant Start Float as backups in case the transducer fails.

▶ 2-FLOAT BACKUP?
→ENABLED

Otherwise, if the transducer was disabled, it will ask the user to enable or disable the Low Alarm Float and whether or not the Lag float should also activate a high water alarm.

▶ LOW ALARM FLT?
→ENABLED

▶ LAG FLT CFG
→LAG/ALARM

Please refer to the panel schematic to see what each input will be configured as based on the above configurations.

Step 5 (In Setup Wizard)

Enter Full Load Amps (FLA) for each pump (Only if the Panel Has Current Sensors). This will configure the high and low amps alarm points for each pump. The system will set the trip points at 25% above and below the FLA entered here. Note that both high and low amps can be field modified individually in the Pump Set Up section of the menu.

▶ P1 FLA
12.3 AMPS

Optional Configurations

These configurations are not absolutely critical for each application, but can be useful for customizing the behavior of the panel.

Step 6 (Optional)

Set Pump Exercise Timer for each pump. If set, the exercise timer will run the pump for a set amount of time after it has been idle for the configured number of days. By default, the exercise timer is disabled.

| Name | Menu Path | Value | Description |
|-----------------------------------|--|--------------------|--|
| Pump One Exercise Interval | MENU->SETTINGS->PASSWORD->PUMP SET UP->PUMP 1->P1 EXERCISOR INT | Disabled - 45 Days | This is the exercise timer for pump one. If the pump has been inactive for the indicated number of days, the system will briefly run the pump to maintain long term pump health. |
| Pump One Exercise Time | MENU->SETTINGS->PASSWORD->PUMP SET UP->PUMP 1->P1 EXERCISOR TIME | 0:00 - 5:00 | This is how long in minutes and seconds pump one will run during an exercise event. |
| Pump Two Exercise Interval | MENU->SETTINGS->PASSWORD->PUMP SET UP->PUMP 2->P2 EXERCISOR INT | Disabled - 45 Days | This is the exercise timer for pump two. If the pump has been inactive for the indicated number of days, the system will briefly run the pump to maintain long term pump health. |
| Pump Two Exercise Time | MENU->SETTINGS->PASSWORD->PUMP SET UP->PUMP 2->P2 EXERCISOR TIME | 0:00 - 5:00 | This is how long in minutes and seconds pump two will run during an exercise event. |

Step 7 (Optional)

Change The System Password. This will change the password from the system default of 1919.

| Name | Menu Path | Value | Description |
|------------------------|---|-------------|---|
| Password Change | MENU->SETTINGS->PASSWORD->SYSTEM SET UP->PASSWORD | 0000 - 9999 | This is the system password. It can be changed from here. |

Step 8 (Optional)

Review the **Settings section of this manual** for any other configurations that may be relevant to the application. The system at this point is configured for a basic application. However, there are several other configurations available in the system that may be useful depending on the specific system requirements.

Stats

The Flex Control Panel panel tracks several statistics for the system. These are accessed through the menu system by following the menu path template shown below. Specific paths for each event's stats are described in the Viewable Events section of this document.



Settings

Available Settings

General System Configurations

These settings modify general system behaviors, such as how long the buzzer stays silenced, how bright the pump run LEDs are, etc.

| Name | Menu Path | Range | Description |
|--------------------------------|---|-------------------|---|
| Automatic Error Reset | MENU->SETTINGS->PASSWORD->SYSTEM SET UP->AUTO ERROR RESET | Disabled, Enabled | If enabled, system error events will clear themselves once the error conditions are resolved. Note that this does not apply to pump errors; pump errors will always require user interaction. |
| Auxiliary Failsafe Mode | MENU->SETTINGS->PASSWORD->SYSTEM SET UP->AUX FAILSAFE | Disabled, Enabled | This setting flips the NO/NC contacts of the auxiliary contacts so that they will trip on system power loss. |
| Silence Time | MENU->SETTINGS->PASSWORD->SYSTEM SET UP->SILENCE TIME | 0 - 99:59:59 | This controls how long the buzzer will stay silenced after the silence button is pressed. |

| Name | Menu Path | Range | Description |
|-------------------------------------|---|---------------------|--|
| Pump Run LED Brightness | MENU->SETTINGS->PASSWORD->SYSTEM SET UP->PUMP RUN LED | High, Med, Low, Off | This controls how bright the pump run indicator LEDs are. |
| System Normal LED Brightness | MENU->SETTINGS->PASSWORD->SYSTEM SET UP->NORMAL LED | High, Med, Low, Off | This controls how bright the system normal indicator LEDs are. |
| Password Change | MENU->SETTINGS->PASSWORD->SYSTEM SET UP->PASSWORD | 0000 - 9999 | This is the system password. It can be changed from here. |

General Pump Configurations

These configurations modify the behavior of the pumps in the system.

| Name | Menu Path | Range | Description |
|--------------------------------------|---|--------------------------|---|
| Seal Alarm Configuration | MENU->SETTINGS->PASSWORD->PUMP SET UP->SEAL ALARM | Alarm Only, Alarm + Stop | This controls whether or not seal fail alarms shut off their pump. |
| High Amps Alarm Configuration | MENU->SETTINGS->PASSWORD->PUMP SET UP->HIGH AMP ALARM | Alarm Only, Alarm + Stop | This controls whether or not high amp alarms shut off their pump. Note that this is only visible if at least one of the pumps has its current sensor enabled. |
| Finish Dose Enable | MENU->SETTINGS->PASSWORD->PUMP SET UP->FINISH DOSE | Disabled, Enabled | If enabled, pumps will finish their dose on cycle even if the stop float goes down. If disabled, the pump will stop running immediately if the stop float goes down. |
| Extra Peak Doses | MENU->SETTINGS->PASSWORD->PUMP SET UP->XTRA PK DOSES | 0-10 | This is the number of peak doses that are done after the peak timer float has deactivated. This is used to make sure enough water is pumped out during a peak dosing event to prevent a repeat peak dosing event. |
| Pump Lead Configuration | MENU->SETTINGS->PASSWORD->PUMP | Alternate Lead, Pump 1 | This sets which pump is the designated lead pump during a pumping event |

| Name | Menu Path | Range | Description |
|------|------------------------|------------------|-------------|
| | SET UP->PUMP LEAD MODE | Lead Pump 2 Lead | |

Pump One Configurations

| Name | Menu Path | Range | Description |
|--|---|--------------------------------|---|
| Pump One Enable | MENU->SETTINGS->PASSWORD->PUMP SET UP->PUMP 1->P1 ENABLE | Disabled, Enabled | This enables or disables pump one. If disabled, the HOA inputs will be unresponsive and the pump will never turn on. |
| Pump One Auxiliary Cutout Configuration | MENU->SETTINGS->PASSWORD->PUMP SET UP->PUMP 1->P1 AUX CUT OUT | Normally Open, Normally Closed | This sets the contact type of the pump one auxiliary cut off input. |
| Pump One Current Sensor Enable | MENU->SETTINGS->PASSWORD->PUMP SET UP->PUMP 1->P1 CURRENT SENSE | Disabled, Enabled | This enables or disables the current sensor for pump one. Note that this option is only available on systems shipped with a current sensor. |
| Pump One Over Current Level | MENU->SETTINGS->PASSWORD->PUMP SET UP->PUMP 1->P1 OVER CURRENT | 0 - 50 Amps | This is the over current threshold for pump one. This is only visible if the current sensor is enabled. |
| Pump One Under Current Level | MENU->SETTINGS->PASSWORD->PUMP SET UP->PUMP 1->P1 LOW AMP LVL | 0 - 50 Amps | This is the under current threshold for pump one. This is only visible if the current sensor is enabled. |
| Pump One Flow Rate | MENU->SETTINGS->PASSWORD->PUMP SET UP->PUMP 1->P1 FLOW RATE | 0 - 999 GPM | This is the flowrate for pump one. It is used to calculate total gallons pumped. |
| Pump One Exercise Interval | MENU->SETTINGS->PASSWORD->PUMP SET UP->PUMP 1->P1 EXERCISER INT | Disabled - 45 Days | This is the exerciser for pump one. If the pump has been inactive for the indicated number of days, the system will briefly run the pump to maintain long term pump health. |

| Name | Menu Path | Range | Description |
|------------------------------------|--|---------------------|--|
| Pump One Exercise Time | MENU->SETTINGS->PASSWORD->PUMP SET UP->PUMP 1->P1 EXERCISER TIME | 0:00 - 5:00 | This is how long in minutes and seconds pump one will run during an exercise event. |
| Pump One Extended Run Alarm | MENU->SETTINGS->PASSWORD->PUMP SET UP->PUMP 1->P1 EXT RUN ALARM | 00:00:00 - 99:59:59 | This is how long the system will run the pump before triggering an extended run time alarm. To disable this, set the time to zero. |
| Pump One Dose On Time | MENU->SETTINGS->PASSWORD->PUMP SET UP->PUMP 1->P1 DOSE ON TIME | 0 - 30:59 | This is the duration of the dose on portion of the dosing cycle. |
| Pump One Dose Off Time | MENU->SETTINGS->PASSWORD->PUMP SET UP->PUMP 1->P1 DOSE OFF TIME | 0 - 24:00:00 | This is the duration of the dose off portion of the dosing cycle. |
| Pump One Peak On Time | MENU->SETTINGS->PASSWORD->PUMP SET UP->PUMP 1->P1 PEAK ON TIME | 0 - 30:59 | This is the duration of the dose on portion of the peak dosing cycle. This cycle is used during high water alarms. |
| Pump One Peak Off Time | MENU->SETTINGS->PASSWORD->PUMP SET UP->PUMP 1->P1 PEAK OFF TIME | 0 - 24:00:00 | This is the duration of the dose off portion of the peak dosing cycle. This cycle is used during high water alarms. |

Pump Two Configurations

| Name | Menu Path | Range | Description |
|----------------------------------|--|-------------------|--|
| Pump Two Enable | MENU->SETTINGS->PASSWORD->PUMP SET UP->PUMP 2->P2 ENABLE | Disabled, Enabled | This enables or disables pump two. If disabled, the HOA inputs will be unresponsive and the pump will never turn on. |
| Pump Two Auxiliary Cutout | MENU->SETTINGS->PASSWORD->PUMP | Normally Open, | This sets the contact type of the pump two auxiliary cut off input. |

| Name | Menu Path | Range | Description |
|---|--|------------------------|---|
| Configuration | SET UP->PUMP 2->P2 AUX CUT OUT | Normally Closed | |
| Pump Two Current Sensor Enable | MENU->SETTINGS- >PASSWORD->PUMP SET UP->PUMP 2->P2 CURRENT SENSE | Disabled, Enabled | This enables or disables the current sensor for pump two. Note that this is option is only available on systems shipped with a current sensor. |
| Pump Two Over Current Level | MENU->SETTINGS- >PASSWORD->PUMP SET UP->PUMP 2->P2 OVER CURRENT | 0 - 50 Amps | This is the over current threshold for pump two. This is only visible if the current sensor is enabled. |
| Pump Two Under Current Level | MENU->SETTINGS- >PASSWORD->PUMP SET UP->PUMP 2->P2 LOW AMP LVL | 0 - 50 Amps | This is the under current threshold for pump two. This is only visible if the current sensor is enabled. |
| Pump Two Flow Rate | MENU->SETTINGS- >PASSWORD->PUMP SET UP->PUMP 2->P2 FLOW RATE | 0 - 999 GPM | This is the flowrate for pump two. It is used to calculate total gallons pumped. |
| Pump Two Exercise Interval | MENU->SETTINGS- >PASSWORD->PUMP SET UP->PUMP 2->P2 EXERCISER INT | Disabled - 45 Days | This is the exerciser for pump two. If the pump has been inactive for the indicated number of days, the system will briefly run the pump to maintain long term pump health. |
| Pump Two Exercise Time | MENU->SETTINGS- >PASSWORD->PUMP SET UP->PUMP 2->P2 EXERCISER TIME | 0:00 - 5:00 | This is how long in minutes and seconds pump two will run during an exercise event. |
| Pump Two Extended Run Alarm | MENU->SETTINGS- >PASSWORD->PUMP SET UP->PUMP 2->P2 EXT RUN ALARM | 00:00:00 - 99:59:59 | This is how long the system will run the pump before triggering an extended run time alarm. To disable this, set the time to zero. |
| Pump Two Dose On Time | MENU->SETTINGS- >PASSWORD->PUMP | 0 - 30:59 | This is the duration of the dose on portion of the dosing cycle. |

| Name | Menu Path | Range | Description |
|-------------------------------|--|--------------|---|
| | SET UP->PUMP 2->P2 DOSE ON TIME | | |
| Pump Two Dose Off Time | MENU->SETTINGS->PASSWORD->PUMP SET UP->PUMP 2->P2 DOSE OFF TIME | 0 - 24:00:00 | This is the duration of the dose off portion of the dosing cycle. |
| Pump Two Peak On Time | MENU->SETTINGS->PASSWORD->PUMP SET UP->PUMP 2->P2 PEAK ON TIME | 0 - 30:59 | This is the duration of the dose on portion of the peak dosing cycle. This cycle is used during high water alarms. |
| Pump Two Peak Off Time | MENU->SETTINGS->PASSWORD->PUMP SET UP->PUMP 2->P2 PEAK OFF TIME | 0 - 24:00:00 | This is the duration of the dose off portion of the peak dosing cycle. This cycle is used during high water alarms. |

Input Configurations

These configurations change the behavior of the inputs of the system.

General Input Configurations

| Name | Menu Path | Range | Description |
|-------------------------------------|--|--------------------------------|--|
| Float Sequence Error Enable | MENU->SETTINGS->PASSWORD->INPUT SET UP->FLOAT ERRORS | Disabled, Enabled | If enabled, the system will alarm if the floats activate out of order. For example, if the start float activates before the stop float an error will be activated for the stop float. |
| Seal Sensor Type | MENU->SETTINGS->PASSWORD->INPUT SET UP->SEAL INPUT TYPE | Normally Open, Normally Closed | This configures the seal fail sensor input type. A normally open sensor will alarm when the input is closed (sensor in water). A normally closed sensor will trigger an alarm when the sensor wires are opened (the seal fail relay on the pump opened). |
| Water Sensor One Sensitivity | MENU->SETTINGS->PASSWORD->INPUT SET UP->WATER SENSOR ONE | 10K - 100K | This is the sensitivity of water sensor (seal fail sensor) one. It represents the approximate resistance at which the input will activate. 100K |

| Name | Menu Path | Range | Description |
|-------------------------------------|--|------------|---|
| | | | is the most sensitive, and 10K is the least sensitive |
| Water Sensor Two Sensitivity | MENU->SETTINGS->PASSWORD->INPUT SET UP->WATER SENSOR TWO | 10K - 100K | This is the sensitivity of water sensor (seal fail sensor) two. It represents the approximate resistance at which the input will activate. 100K is the most sensitive, and 10K is the least sensitive |

Input Functions

All of the sensor inputs of the Flex Control Panel are configurable to a subset of the functions shown below. The inputs come factory configured to the functions shown in the panel schematic, but can be changed by the installer in the field. These configurations determine what each input does when it activates.

Below is a brief summary of all available input functions.

| Option Number | Name | Description |
|---------------|--------------|--|
| 0 | Disabled | This disables the input. |
| 1 | Low Alarm | This is a low level alarm. Will also act as a redundant off input. |
| 2 | Wide Angle | This is a wide angle pump control float. On activation, will start the lead pump. On deactivation, will turn off any active pumps. |
| 3 | Stop Float | This is a stop float. |
| 4 | Lead/Start | This is a pump start float. Starts the lead pump in the system on activation. |
| 5 | Lag Float | This is the lag float. Starts the lag pump in the system on activation. |
| 6 | Lag/Alarm | This is a lag float that also activates a high water alarm. Will start the lag pump and start a high water alarm. |
| 7 | Timer Enable | This is the timer enable float. It will start a time dosing cycle for the lead pump. |
| 8 | Peak Timer | This is the peak timer start float. It will start a peak time dosing cycle for the currently active pump. |

| Option Number | Name | Description |
|---------------|------------|---|
| 9 | High Alarm | This is a high water alarm float. Will start a high water alarm on activation. |
| 10 | Aux Alarm | This is a general use alarm input. Will start the Aux Alarm event on activation. |
| 11 | Transducer | This sets the input to function as a transducer. Note that this is only available on input 5. |

Below are the configurations for the system inputs. Please reference the above table when reading the range column.

| Name | Menu Path | Range | Description |
|-----------------------------|---|-----------------|--|
| Input One Function | MENU->SETTINGS->PASSWORD->INPUT SET UP->INPUT ONE | 0, 1, 10 | This controls the function of input one. |
| Input Two Function | MENU->SETTINGS->PASSWORD->INPUT SET UP->INPUT TWO | 0, 2, 3, 7 | This controls the function of input two. |
| Input Three Function | MENU->SETTINGS->PASSWORD->INPUT SET UP->INPUT THREE | 0, 4, 8 | This controls the function of input three. |
| Input Four Function | MENU->SETTINGS->PASSWORD->INPUT SET UP->INPUT FOUR | 0, 5, 6, 9 | This controls the function of input four. |
| Input Five Function | MENU->SETTINGS->PASSWORD->INPUT SET UP->INPUT FIVE | 0, 6, 9, 10, 11 | This controls the function of input five. |

Transducer Configurations

These are the configurations for the transducer. **Note that these settings will only be accessible if input five is set to transducer mode.**

| Name | Menu Path | Range | Description |
|-----------------------------------|---|-------------------|---|
| Transducer Voltage Setting | MENU->SETTINGS->PASSWORD->INPUT SET UP->TRANSDUCER CONFIG->24V ENABLE | Disabled, Enabled | If disabled, the voltage for the transducer will be 12V. If enabled, the voltage will be 24V. |

| Name | Menu Path | Range | Description |
|---|---|------------------------------------|--|
| Transducer Response Type | MENU->SETTINGS->PASSWORD->INPUT SET UP->TRANSDUCER CONFIG->RESPONSE TYPE | "LO/HI: 4/20 mA", "LO/HI: 20/4 mA" | This setting controls the response of the transducer input to higher and lower readings. Use this if the system is using an ultra-sonic transducer with a reversed response to water depth (i.e., a maximum sensor output when the water is lowest). |
| Transducer Display Mode | MENU->SETTINGS->PASSWORD->INPUT SET UP->TRANSDUCER CONFIG->DISPLAY MODE | Absolute, Relative | In absolute mode, the transducer readings are shown in feet/inches or meters. In relative mode, the readings are shown as a percentage of the total tank height. |
| Transducer Display Units | MENU->SETTINGS->PASSWORD->INPUT SET UP->TRANSDUCER CONFIG->DISPLAY UNITS | Imperial, Metric | This controls the units transducer readings are displayed in. |
| Transducer Rated Depth | MENU->SETTINGS->PASSWORD->INPUT SET UP->TRANSDUCER CONFIG->RATED DEPTH | 0 - 99' 11" (30.45 meters) | This is the rated depth of a system transducer. Used to calculate depth from the 4 - 20 mA reading of the transducer. |
| Transducer Field Callibration | MENU->SETTINGS->PASSWORD->INPUT SET UP->TRANSDUCER CONFIG->SET DEPTH | 0 - 99' 11" (30.45 meters) | This is used to calibrate the transducer. To calibrate, put the transducer into some known depth of water (or take it completely out of the water for a zero reading) and then set the correct depth with this setting. |
| Transducer Tank Height | MENU->SETTINGS->PASSWORD->INPUT SET UP->TRANSDUCER CONFIG->TANK HEIGHT | 0 - 99' 11" (30.45 meters) | This is the depth of the tank the transducer is monitoring. This is used to calculate depth percentage readings in relative display mode. |
| Transducer Low Level Alarm Depth | MENU->SETTINGS->PASSWORD->INPUT SET UP->TRANSDUCER CONFIG->LOW LEVEL ALARM DEPTH | 0 - 99' 11" (30.45 meters) | This is the low level alarm trip point of the transducer. Set to zero to disable. |
| Transducer Stop Level | MENU->SETTINGS->PASSWORD->INPUT SET | 0 - 99' 11" (30.45 | This is the stop level trip point of the transducer. Set to zero to disable. |

| Depth Name | Menu Path | Range (meters) | Description |
|--|--|-------------------------------|---|
| | UP->TRANSDUCER CONFIG->STOP LEVEL DEPTH | | |
| Transducer Lead/Start Level Depth | MENU->SETTINGS->PASSWORD->INPUT SET UP->TRANSDUCER CONFIG->LEAD LEVEL DEPTH | 0 - 99' 11" (30.45 meters) | This is the lead level trip point of the transducer. Set to zero to disable. |
| Transducer Lag Level Depth | MENU->SETTINGS->PASSWORD->INPUT SET UP->TRANSDUCER CONFIG->LAG LEVEL DEPTH | 0 - 99' 11" (30.45 meters) | This is the lag level trip point of the transducer. Set to zero to disable. |
| Transducer Lag/Alarm Level Depth | MENU->SETTINGS->PASSWORD->INPUT SET UP->TRANSDUCER CONFIG->LAG/ALARM LEVEL DEPTH | 0 - 99' 11" (30.45 meters) | This is the lag/alarm level trip point of the transducer. Set to zero to disable. |
| Transducer Timer Override Level Depth | MENU->SETTINGS->PASSWORD->INPUT SET UP->TRANSDUCER CONFIG->TIMER OVERRIDE | 0 - 99' 11" (30.45 meters) | This is the level at which peak time dosing will activate. Set to zero to disable. |
| Transducer High Alarm Level Depth | MENU->SETTINGS->PASSWORD->INPUT SET UP->TRANSDUCER CONFIG->HIGH ALARM LEVEL DEPTH | 0 - 99' 11" (30.45 meters) | This is the high alarm level trip point of the transducer. Set to zero to disable. |
| Transducer Aux Alarm Level Depth | MENU->SETTINGS->PASSWORD->INPUT SET UP->TRANSDUCER CONFIG->AUX ALARM LEVEL | 0 - 99' 11" (30.45 meters) | This is the level over which the auxiliary alarm will activate. Set to zero to disable. |

Config Code

Config codes on this product can be decoded by customer support to provide a snap-shot for how the system is configured. The code itself is a base 32 number that must be decoded to yield the system configurations.



Trouble Shooting

Inputs are stuck on

Check the float wiring as described in the Input Wiring section. If a single common is being used between the inputs they must be wired as specified.

The Seal Alarm is stuck on

Check that a ground connection from the seal sensor is not wired into the signal connection of the seal input. If that is not the issue, try reducing the sensitivity of the seal sensor in the menu. See input configurations for details on where in the menu this setting is located.