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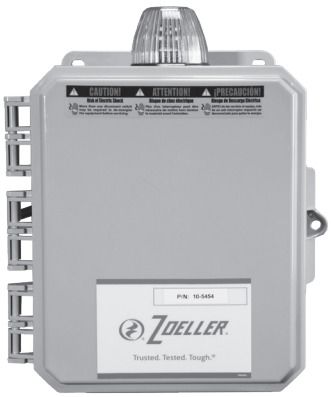
Installation Instruction
1Ph Simplex Timed Dose Panel Model: 10-5454, Rev A

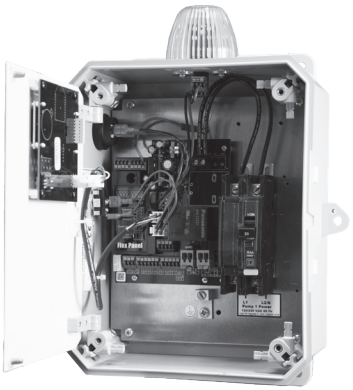
Description: Control, Sim/Td/120/208/240V/1Ph/4X/7-15A/Ald

Introduction

The control panel is capable of controlling and monitoring one pump and five sensor inputs. It can be configured for Three Float control or Four Float Control with an additional Auxiliary Alarm input on Input 5. Pump mode (hand mode, off mode, and auto mode) is controlled via a button on the inner front door of the control panel. For controlling the pump, the panel is equipped with a cost saving replaceable power relay board. The control panel can also 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 field configuration as well as statistics tracking. Finally, the panel can be connected to Vizzy.Site 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, test, and operate 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.

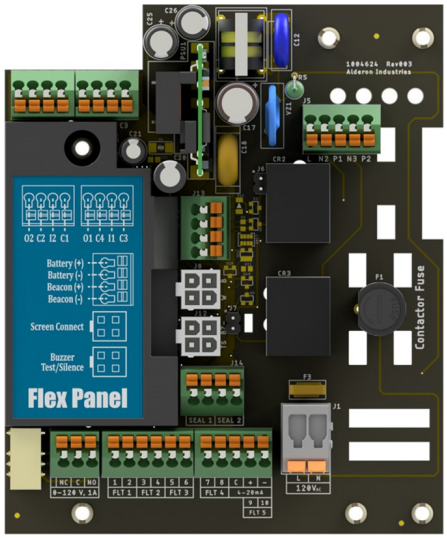
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Input Wiring

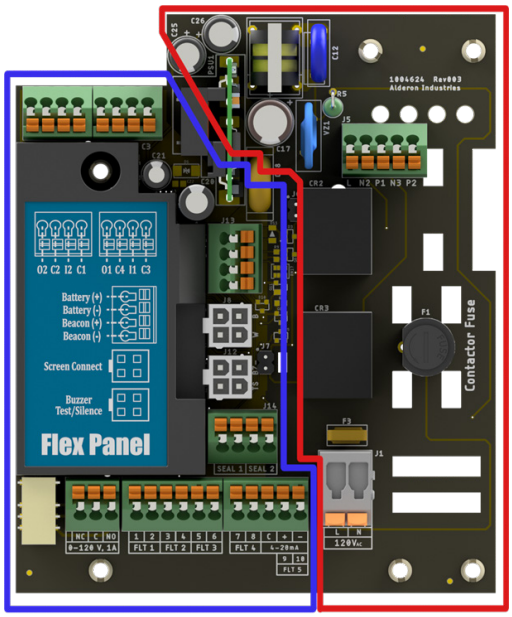
General Wiring

The 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).



Input Voltage Levels

All of the signal inputs of the 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.



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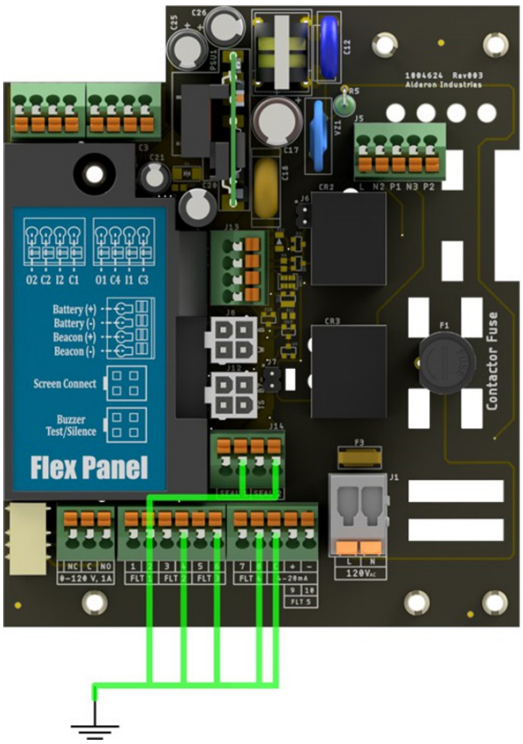
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Wiring Inputs With Common Float Connections

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 special internal circuitry. Therefore, if this input is being used 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 control panel 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.

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Menu System

Interface

The user interface of the 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 for all user inputs to 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

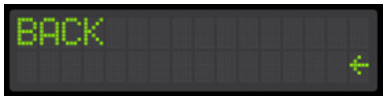
The Test/Silence switch on the side of the panel can be used to:

- 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.

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To Change Dose Times

By default, the control panel is configured for time dosing with no peak timer override. To modify the dose timings, follow the below steps:

1. Make sure you are on the home screen by rotating the menu knob left (counter-clockwise)
   - "System Normal" should display if there are no alarms
   - If you are not at the home screen, press the test silence switch to navigate there

2. From the home screen, rotate the knob one click to the right (clockwise)
   - You should see "DOSING TIMES"
3. Click on "DOSING TIMES" to view and change the dose timing for the panel





If the "DOSING TIMES" screen does not display, the system might be configured for demand dosing. Check in the "Advanced Settings" shown below that the system is in time dose mode.

To Change Advanced Settings

There are several configurations available for the control panel. These are located under the "Advanced Settings" section of the menu system. To change them, follow the below steps:

1. Make sure you are on the home screen by rotating the menu knob left (counter-clockwise)
   - "System Normal" should display if there are no alarms
   - If you are not at the home screen, press the test silence switch to navigate there

2. From the home screen, rotate the knob to the right until you see "ADVANCED"
3. Click on "ADVANCED"
4. Rotate one more click to the right to see "SETTINGS"
5. Click on "SETTINGS"
6. Rotate the knob left and right to select the desired configuration, and then click to change it





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 (press the test/silence switch to jump there) 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.

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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 examples of optional configurations that can be used to customize the application. An exhaustive list of configurations can be found in the Settings section.

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 the low alarm input 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. From the home screen, rotate the knob to the right (clock-wise) until you see "ADVANCED". Then, follow the menu path shown below:





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

- Dosing Type
- Dosing Time Configurations (If Time Dosing)
- Low Alarm Enable/Disable
- High Alarm Float Mode
- Alarm Only OR Alarm + Demand Dose
- Override Latching Alarms
- If enabled, this will cause alarms to latch if they've been on for more than 5 seconds

Step 2 (In Setup Wizard)

Set Dosing Configuration. This configures the system for Demand Dosing or Time Dosing. **Demand Dose**

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



Time 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.



If you selected Time Dose Mode, the system will ask if a Peak Timer should be enabled. If enabled, FLT 3 will be become a Peak Timer Override input. When activated, this input will load in the "Peak" dosing times. These Peak times can be programmed to dose more aggressively to keep up during high demand times.

The Wizard will also ask if "Finish Dose" should be enabled. If enabled, "Finish Dose" will cause the pump to finish its full dose on time even if the timer enable float goes down part ways through a dose on cycle. If disabled, the pump will turn off immediately once the timer enable float goes down.

Step 3 (In Setup Wizard)

Configure the Low Alarm Input. This will enable or disable the Low Alarm Float input (FLT 1) of the system. If enabled, this input must be closed (float active) to allow the pump to run. If it is open (float inactive) a Low Level Alarm will trigger. If it is disabled, this input will be ignored when left open.
NOTE: This configuration will automatically enable itself if a closed float is detected on FLT 1 for more than 30 seconds. In this case, the system will assume there is a functioning Low Alarm/Redundant Off float connected and will enable the Low Alarm function.

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Step 4 (In Setup Wizard)

Configure the High Alarm Input. This will configure the high alarm float to be an alarm only float or a high alarm plus demand dose override float. If it is set to "ALARM ONLY", the float will cause a high level alarm and NOT start the pump. If set to "ALARM + START", it will cause a high level alarm and also demand dose the pump while active, even if the system is set for time dosing. In other words, a "ALARM + START" high level float will cause the pump to run continuously as long as the float is active.



Step 5 (In Setup Wizard)

Configure Latching Alarms. If this option is enabled, an alarm that has been active for more than 5 seconds will "latch" on and require user input to clear. If it is disabled, alarms will clear automatically once the alarm conditions resolves. For example, if latch alarms are disabled a high level alarm will clear immediately once the high alarm float goes down.



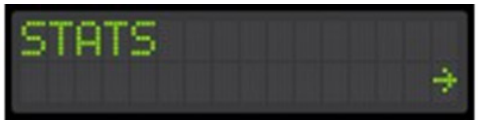
Optional Configurations

There are several more optional configurations available in the Advanced Settings section of the menu. Please see the settings section of this manual for more details.

Stats

The control 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.













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Settings

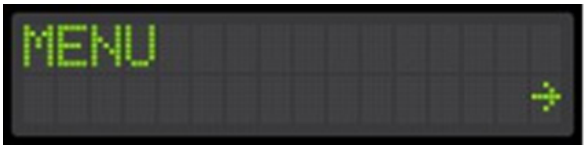
Available Settings

Below is a list of all of the settings available. Note that dose time settings are located at the top of the menu (see "To Change Dose Times" above for more details).

Name	Menu Path	Range	Description
Settings Lock	ADVANCED- >SETTINGS- >SETTINGS LOCK	Disabled, Enabled	This setting can be used to enable a password lock on all configurations for the system.
High Alarm Config	ADVANCED- >SETINGS- >"HIGH ALARM"	Alarm Only, Alarm + Start	This controls whether or not the high alarm float is alarm only or alarm plus demand dose override.
Low Alarm Enable	ADVANCED- >SETTINGS->LOW ALARM INPUT	Disabled, Enabled	This enables or disables the low alarm input.
Latching Alarms	ADVANCED- >SETTINGS- >LATCHING ALARMS	Disabled, Enabled	If enabled, this causes all alarms to latch after they've been active for 5 seconds.
Float Sequence Errors	ADVANCED- >SETTINGS->FLOAT ERRORS	Disabled, Enabled	If enabled, the system will detect and alarm on float sequence errors. For example, if the start float activates before the off float, an alarm will trigger on the stop float to indicate that it failed to activate.
Dose Configuration	ADVANCED- >SETTINGS->DOSE CONFIG	Demand Dose, Time Dose	This controls if the system is in demand dose or time dosing mode.
Pump 1 Flow Rate	ADVANCED- >SETTINGS->P1 FLOW RATE	0 - 999 GPM	This is the flow rate for pump one. It is used to calculate total gallons pumped.
Pump 2 Flow Rate	ADVANCED- >SETTINGS->P2 FLOAT RATE	0 - 999 GPM	This is the flow rate for pump two. It is used to calculate total gallons pumped.
Pump 1 Extended Run Alarm	ADVANCED- >SETTINGS->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 2 Extended Run Alarm	ADVANCED- >SETTINGS->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.
Peak Timer Enable	ADVANCED- >SETTINGS->PEAK DOSE	Disabled, Enabled	This enables or disables the peak timer override function. If enabled, FLT 3 is configured as a peak timer override that will load in a second set of peak dosing times programmed by the user.
Finish Dose	ADVANCED- >SETTINGS->FINISH DOSE	Disabled, Enabled	If enabled, this will cause the pump to finish its current on dose time even if the timer enable float goes down part ways through a dosing cycle.
Pump Lead Mode	ADVANCED- >SETTINGS->PUMP LEAD MODE	Alternate Lead, Pump 1 Lead, Pump 2 Lead	This sets which pump is the designated lead pump during a pumping event.
Password Change	MENU->SETTINGS- >PASSWORD >SYSTEM SET UP- >PASSWORD	0000 - 9999	This is the system password. It can be changed from here.

Config Code

Config codes on this product can be decoded by customer support to provide a snapshot 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.

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