

MVP-SSF PTRO/DMRO

DCN: EIN-CP-OP-2113

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Orenco's Most Versatile Panel (MVP) line of control panels includes an easy-to-use programmable logic unit that incorporates many timing and logic functions. This panel will accommodate timed dose septic tank systems and either time dosed or on-demand sand filter systems. The panel's default mode of operation for the sand filter pumping is on-demand. This document describes each mode of operation.

Alarm and Data Screens:

Alarm and data screens have been included with the panel to assist with panel monitoring and troubleshooting. The following alarm and data screens have been included in your panel, look for the ✓ to determine if the screen will be displayed for timed dosed or on-demand modes. Navigation between the screens is accomplished by using the up and down arrow keys. See **"Screen Navigation"** section for more details.

Screen	Description	Sand Filter Timed	Sand Filter Demand	Data Type*
Alarm Screens†				
1	Sand filter high level alarm	✓	✓	
2	Septic tank high level alarm	✓	✓	
3	Sand filter low level alarm	✓	✓	
4	Septic tank low level alarm	✓	✓	
Data Screens				
5	Sand filter float status and timer mode (default screen, see fig 1)	✓	✓	
6	Septic tank float status	✓	✓	
7	Sand filter pump cycles at top of screen and pump run time beneath	✓	✓	T
8	Septic tank pump cycles at top of screen and pump run time beneath	✓	✓	T
9	Sand filter high level alarms	✓	✓	T
10	Septic tank high level alarms at top of screen and low level alarms beneath	✓	✓	T
11	Sand filter override cycles at top of screen and timer float events beneath	✓		T
12	Septic tank override cycles	✓	✓	T
13	Power faults at top of screen and time in service beneath	✓	✓	T
14	Sand filter pump cycles at top of screen and pump run time beneath	✓	✓	R
15	Septic tank pump cycles at top of screen and pump run time beneath	✓	✓	R
16	Sand filter high level alarms	✓	✓	R
17	Septic tank high level alarms at top of screen and low level alarms beneath	✓	✓	R
18	Sand filter override cycles at top of screen and timer float events beneath	✓		R
19	Septic tank override cycles	✓	✓	R
20	Power faults at top of screen and time in service since last reset	✓	✓	R

† Alarm screens will only be displayed when alarms are active and include a date and time stamp of when the alarm started.

* Screens with "T" in the lower right corner have totaled values for the data. Screens with "R" in the lower right corner have resettable data and display the accumulated values since the last reset. To reset the accumulated values, hold the silence button on the panel for 10 seconds.

Sand Filter Float Status and Timer Mode Screen:

This default screen will display the condition of the sand filter floats and the operation mode of the panel for the sand filter pump. If the floats are lifted out of sequence, this screen will display “Float Error” while showing the float status.

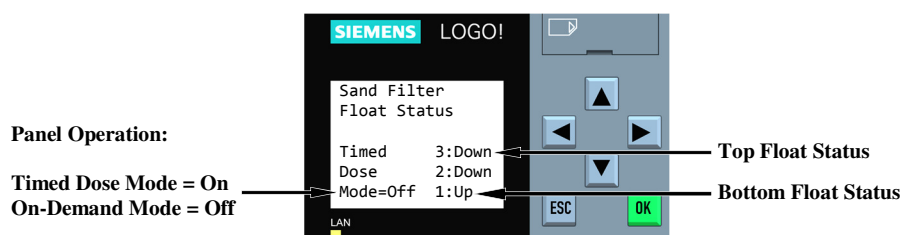


Figure 1. Sand Filter Float Status and Timer Mode Screen

Digital Input and Digital Output Screens:

The unit will activate various inputs and outputs as it operates (see Figure 2).

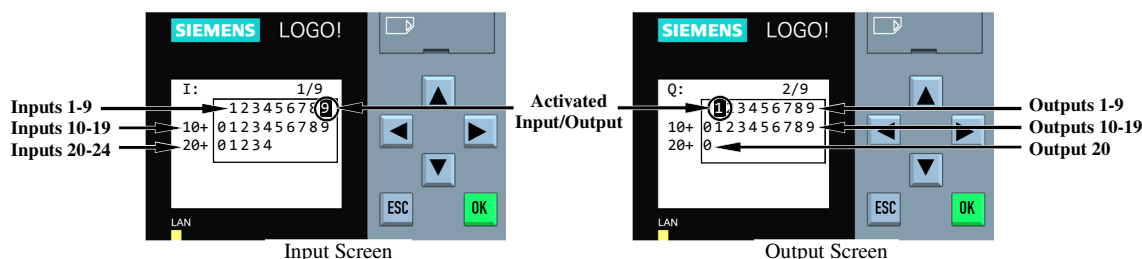


Figure 2. Input & Output Screens

Knowing what conditions cause the inputs and outputs to activate can be a helpful installation and troubleshooting tool. The input functions will vary based on the mode of operation of the panel. The following inputs and outputs have been used with your panel:

#	Functions:	Activation Conditions:
Inputs (Sand Filter On-Demand Mode)		
1	Septic Tank Redundant Off & Low Level Alarm Float	Float in up position
2	Septic Tank Timer On & Off Float	Float in up position
3	Septic Tank Override Timer On & Off Float	Float in up position
4	Septic Tank High Level Alarm Float	Float in up position
5	Sand Filter Redundant Off & Low Level Alarm Float	Float in up position
6	Sand Filter Pump Off Float	Float in up position
7	Sand Filter Pump On Float	Float in up position
8	Sand Filter High Level Alarm Float	Float in up position
9	Push To Silence	Pushbutton is pressed
10	Alarm Test Switch (Optional)	Switch is activated
Alternate Inputs (Sand Filter Timed Dose Mode)		
6	Sand Filter Timer On & Off Float	Float in up position
7	Sand Filter Override Timer On & Off Float	Float in up position
Outputs		
1	Septic Tank Pump	Septic Tank Pump is called to run
2	Septic Tank Level Alarm Light	Septic Tank Alarm Light is activated
3	Sand Filter Pump	Sand Filter Pump is called to run
4	Sand Filter Level Alarm Light	Sand Filter Alarm Light is activated
5	Audible Alarm	Audible Alarm is activated
6	General Alarm (Optional)	Alarm condition exists

Screen Navigation:

The screens are arranged in the order shown in Figure 3 below. To move between screens, use the four arrow keys. The screens of interest are shown in bold. Additional built-in screens will be present, but do not contain useful information.

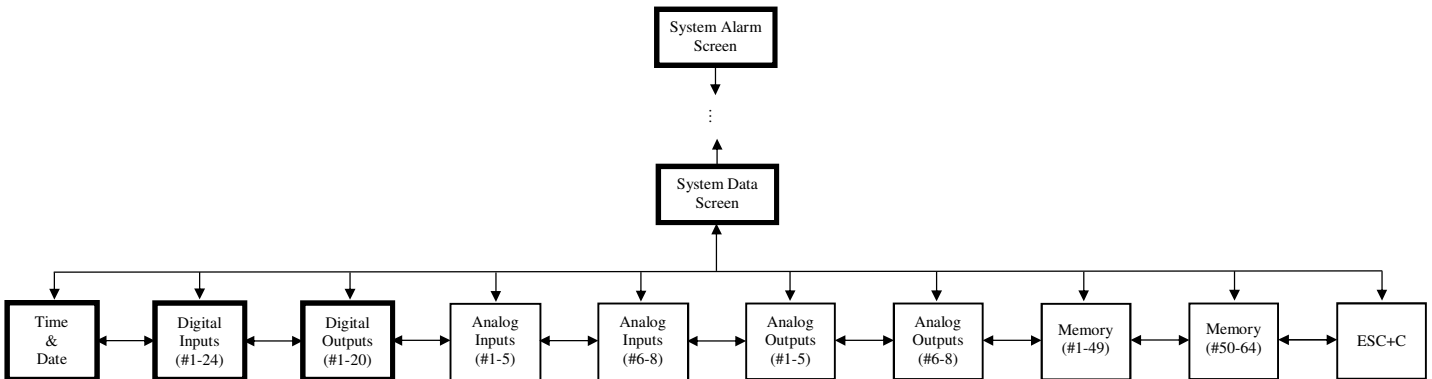


Figure 3. Screen Layout

Septic Tank Panel Operation:

Your control panel can perform the float functions listed below. Depending on the number of floats for your application, some functions may be omitted or combined.

Septic Tank High Level Alarm: This float activates the septic tank alarm light (steady) and audible alarm when lifted for longer than the high level alarm delay. The audible alarm may be silenced by pressing the illuminated PUSH TO SILENCE button on the front of the control panel. The alarm light (steady) will remain on until the float is lowered, and the audible alarm will reactivate in 12 hours if condition is not corrected.

Septic Tank Override Timer On & Off: This float activates the override timer function when lifted for more than 2 seconds. This timer function controls the septic tank pump cycles during high flow conditions. The override timer function will remain active until at least the set minimum override time has been completed and the float has lowered. When the override timer function has been completed, normal timer operation will resume.

Septic Tank Timer On & Off: This timer will be activated as long as the timer on & off float is up. This timer function controls the septic tank pump cycles during normal flow conditions.

Septic Tank Redundant Off & Low Level Alarm: This float turns off the septic tank pump when lowered for more than 2 seconds. Pumping will be disabled in both the automatic and manual modes. This float also activates the septic tank pump alarm light (flashing) and audible alarm. The audible alarm may be silenced by pressing the illuminated PUSH TO SILENCE button on the front of the control panel. The alarm light will remain flashing until the float is raised. If the alarm condition is not corrected in 12 hours, the audible alarm will be reactivated.

Sand Filter Panel Operation:

This panel supports two different modes of operation based on selected parameter settings. See the "Setting Instructions" for this panel for information on how to change the mode of operation and other adjustable parameters. Float functions for both modes of operation are listed below. Depending on the number of floats for your application, some functions may be omitted or combined.

Sand Filter On-Demand Operation (Default):

Sand Filter High Level Alarm: This float activates the sand filter alarm light (steady) and audible alarm when lifted for longer than the high level alarm delay. The audible alarm may be silenced by pressing the illuminated PUSH TO SILENCE button on the front of the control panel. The alarm light (steady) will remain on until the float is lowered, and the audible alarm will reactivate in 12 hours if condition is not corrected. Note: A high level condition in the sand filter basin will disable the septic tank pump in automatic.

Sand Filter Pump On: This float activates the sand filter pump when lifted. The pump will run for the minimum run time or until the pump off float (if used) is lowered.

Sand Filter Pump Off: This float turns off the sand filter pump when lowered if the minimum run time has elapsed.

Sand Filter Redundant Off & Low Level Alarm: This float turns off the sand filter pump when lowered for more than 2 seconds. Pumping will be disabled in both the automatic and manual modes. This float also activates the sand filter pump alarm light (flashing) and audible alarm. The audible alarm may be silenced by pressing the illuminated PUSH TO SILENCE button on the front of the control panel. The alarm light will remain flashing until the float is raised. If the alarm condition is not corrected in 12 hours, the audible alarm will be reactivated.

Sand Filter Timed Dose Operation:

Sand Filter High Level Alarm: This float activates the sand filter alarm light (steady) and audible alarm when lifted for longer than the high level alarm delay. The audible alarm may be silenced by pressing the illuminated PUSH TO SILENCE button on the front of the control panel. The alarm light (steady) will remain on until the float is lowered, and the audible alarm will reactivate in 12 hours if condition is not corrected. Note: A high level condition in the sand filter basin will disable the septic tank pump in automatic.

Sand Filter Override Timer On & Off: This float activates the sand filter override timer function when lifted for more than 2 seconds. This timer function controls the pump cycles during high flow conditions. The override timer function will remain active until at least the set minimum override time has been completed and the float has lowered. When the override timer function has been completed, normal timer operation will resume.

Sand Filter Timer On & Off: This float activates the sand filter timer function when lifted. The timer will be activated while the float is up and will be deactivated 30 seconds after the float is lowered. This timer function controls the sand filter pump cycles during normal flow conditions. Note: The timer will start with its off cycle.

Sand Filter Redundant Off & Low Level Alarm: This float turns off the sand filter pump when lowered for more than 2 seconds. Pumping will be disabled in both the automatic and manual modes. This float also activates the sand filter pump alarm light (flashing) and audible alarm. The audible alarm may be silenced by pressing the illuminated PUSH TO SILENCE button on the front of the control panel. The alarm light will remain flashing until the float is raised. If the alarm condition is not corrected in 12 hours, the audible alarm will be reactivated.