MVP-DAX DM CS

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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 or on-demand systems. The panel's default mode of operation is timed dose. 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	Timed	Demand	Data Type*
	Alarm Screens†			
1	High level alarm	√	√	
2	Low level alarm	√	√	
3	Pump 1 fail alarm	√	√	
4	Pump 2 fail alarm	√	√	
	Data Screens			
5	Float status and timer mode (default screen, see fig 1)	√	√	
6	Pump 1 cycles at top of screen and pump 1 run time beneath	√	√	T
7	Pump 2 cycles at top of screen and pump 2 run time beneath	√	√	T
8	High level alarms at top of screen and low level alarms beneath	√	√	T
9	Pump 1 lag events at top of screen and pump 2 lag events beneath	√	√	T
10	Timer float events at top of screen and pump 1 & 2 override cycles beneath	√		T
11	Power faults at top of screen and hours in service beneath	√	√	T
12	Pump 1 cycles at top of screen and pump 1 run time beneath	√	√	R
13	Pump 2 cycles at top of screen and pump 2 run time beneath	√	√	R
14	High level alarms at top of screen and low level alarms beneath	√	√	R
15	Pump 1 lag events at top of screen and pump 2 lag events beneath	√	√	R
16	Timer float events at top of screen and pump 1 & 2 override cycles beneath	√		R
17	Power faults at top of screen and time since reset beneath	√	√	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 totalized 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.

Float Status and Timer Mode Screen:

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

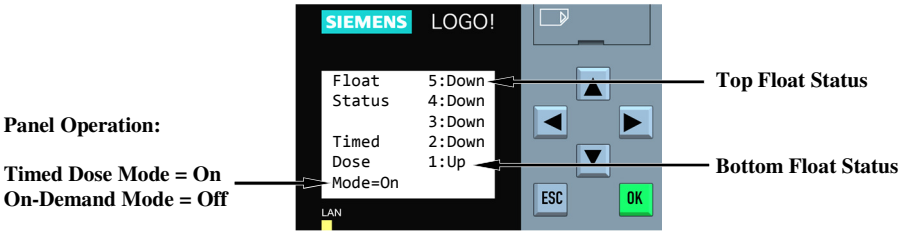
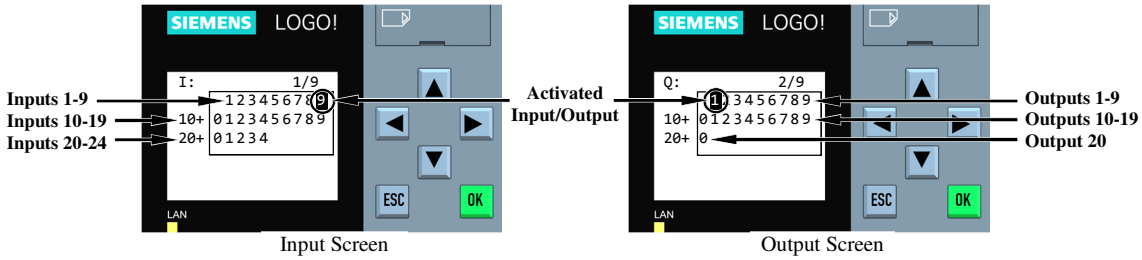


Figure 1. Float Status and Timer Mode Screen

Digital Input and Digital Output Screens:

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



Input Screen Output Screen

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 (Timed Dose Mode)	
1	Redundant Off & Low Level Alarm Float	Float in up position
2	Timer On & Off Float	Float in up position
3	Override Timer On & Off Float	Float in up position
4	Lag Pump Enable Float	Float in up position
5	High Level Alarm Float	Float in up position
6	Current Sensor	Pump is activated
7	Pump Fail Reset	Pushbutton is pressed
8	Push To Silence	Pushbutton is pressed
9	Alarm Test Switch (Optional)	Switch is activated
	Alternate Inputs (On-Demand Mode)	
2	Pump(s) Off Float	Float in up position
3	Lead Pump On Float	Float in up position
4	Lag Pump On Float	Float in up position
	Outputs	
1	Pump 1	Pump is called to run
2	Pump 2	Pump is called to run
3	Level Alarm Light	Level alarm light is activated
4	Pump Fail Light	Pump fail condition exists
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.

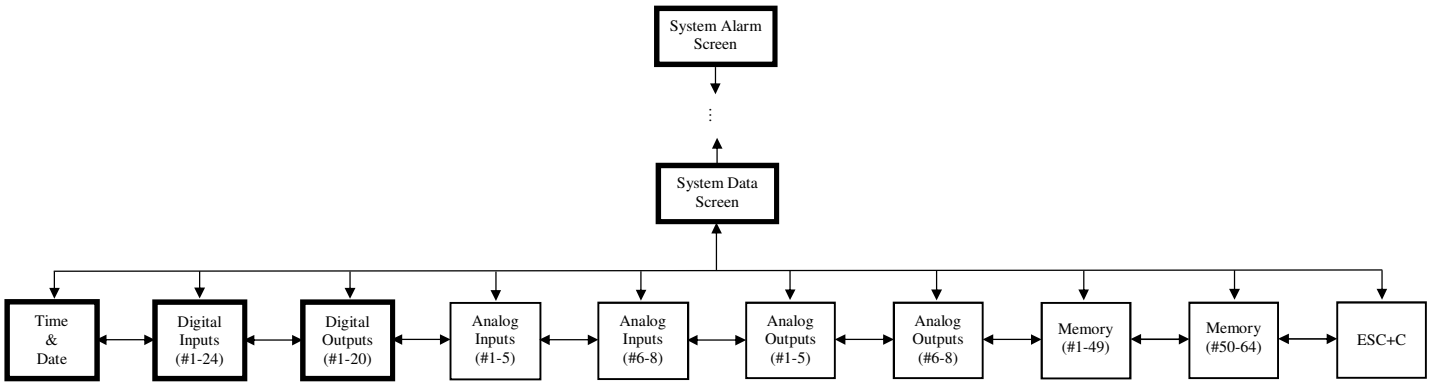


Figure 3. Screen Layout

Panel Modes of 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.

Timed Dose (Default Operation):

High Level Alarm: This float activates the 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.

Lag Pump Enable: This float enables the lag pump to run when the timer function calls for a pump.

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

Timer On & Off: This float activates the 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 pump cycles during normal flow conditions. Note: The timer will start with its off cycle.

Redundant Off & Low Level Alarm: This float turns off the pump(s) when lowered for more than two seconds. This float is a secondary off float, which will operate if the Timer On & Off float fails. Pumping will be disabled in both the automatic and manual modes. This float also activates the 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 lifted, and the audible alarm will reactivate in 12 hours if condition is not corrected.

On-Demand:

High Level Alarm: This float activates the 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.

Lag Pump On: This float activates the lag pump when lifted (all pumps will be on). All pumps will run until the Pump(s) Off float is lowered.

Lead Pump On: This float activates the lead pump when lifted. The pump will run for the duration of the minimum run time or until the Pump(s) Off float is lowered.

Pump(s) Off: This float turns off the pump(s) when lowered if the minimum run time has elapsed.

Redundant Off & Low Level Alarm: This float turns off the pump(s) when lowered for more than 2 seconds. This float is a secondary off float, which will operate if the Pump(s) Off float fails. Pumping will be disabled in both the automatic and manual modes. This float also activates the 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 lifted. If the alarm condition is not corrected in 12 hours, the audible alarm will be reactivated.

Alternation Options:

This panel supports four different modes of operation relating to the pump alternation that are based on selected parameter settings. Additionally, the panel can be set to alternate pumps in the event of a failure. See the setting page for this panel for information on how to adjust these parameters.

Alternating (default): Parameters “Pump 1 Lead” and “Pump 2 Lead” set to “Off”
The lead and lag pumps will alternate for each cycle. This mode provides equal wear on each pump and is recommended for most applications.

Pump 1 Lead: Parameter “Pump 1 Lead” set to “On” and parameter “Pump 2 Lead” set to “Off”
The lead pump is locked to pump #1 and the lag pump is locked to pump #2. No alternation will occur. Pump #1 will be the primary pump for the system. Pump #2 will only be used during high flow conditions.

Pump 2 Lead: Parameter “Pump 1 Lead” set to “Off” and parameter “Pump 2 Lead” set to “On”
The lead pump is locked to pump #2 and the lag pump is locked to pump #1. No alternation will occur. Pump #2 will be the primary pump for the system. Pump #1 will only be used during high flow conditions.

Both Pumps: Parameters “Pump 1 Lead” and “Pump 2 Lead” set to “On” Both pumps will run together for every cycle.

Pump Fail Alternation: If the "Pmp Fail Alt" parameter in the logic unit is set to "On" (default is "Off"), the panel will immediately switch to the other pump in the event of a pump failure.

Pump Fail Alarm:

The current sensor is activated when a pump is called on to run. If a pump does not become activated in 2 seconds, a pump failure will occur which will activate the pump fail alarm light, audible alarm, and an alarm message on the user screen. The audible alarm may be silenced by pressing the illuminated PUSH TO SILENCE button on the front of the control panel. The pump fail light and alarm message may be reset by pushing the PUSH TO RESET button on the front of the control panel, after the pump fail condition has been corrected. If the alarm condition is not corrected in 12 hours, the audible alarm will be reactivated.