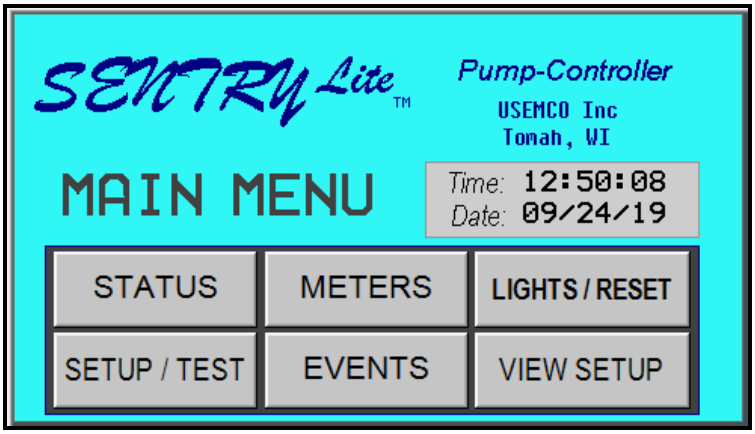
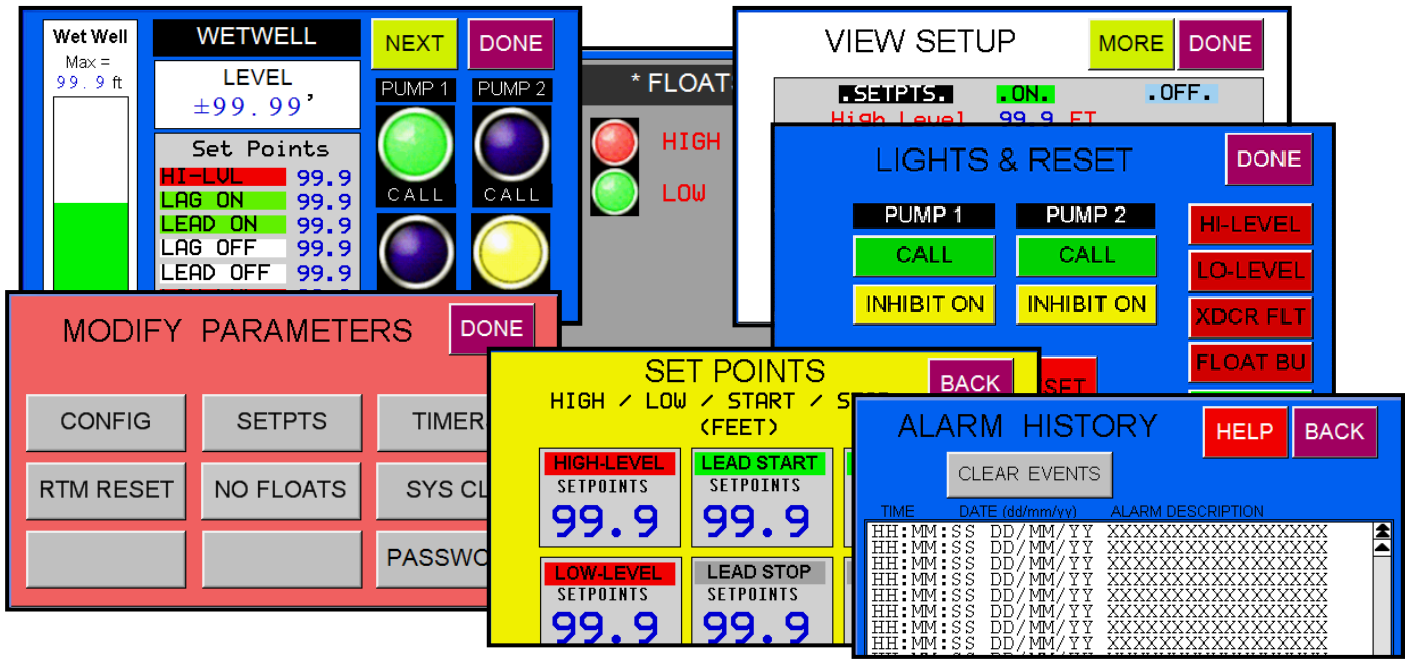
SENTRY Lite™

Lift-Station Pump Controller



- *Bright Color Touch-screen*
- *Easy screen navigation*
- *Accurate system-monitoring*
- *Adjustable setting to fit your application and system-requirements.*

Additional Screens:



The *SENTRY Lite* ™ pump controller by USEMCO Inc. is designed with simplicity in-mind. This controller uses state-of-the-art components and incorporates control feature envied by others in the industry. All this is packaged into one unit. Up front is a bright LCD color touch-screen that can produce over 32,000 different colors. Each screen is individually designed to provide the user with the maximum amount of feedback and information. Navigation through the different screens is simple and easy to understand.

Alarm monitoring is critical and done with ease by the *SENTRY Lite* ™ pump controller. Note that every alarm event is time-and-date stamped and placed in one area for easy access and viewing.

Setup is simple and requires little to no training. Field adjustable parameters like transducer rating & offset, set points and timer-delays allow the user to custom fit this controller to the pumping system.

Built-in test routines help to minimize or prevent pump control related problems from occurring. The *SENTRY Lite* ™ pump controller has a built-in 'Pump Test' feature. It allows the user to simulate (increase/decrease) the wet well level. All the necessary controls and feedback are designed on a single screen. This allows the user to perform this operation with ease and confidence.

This controller also comes with a Screen Saver feature where the display will automatically go 'dark' after a timed period expires. This is factory set at 5 minutes. To view the screens again, touch any portion of the display area.

Options available:

Float Backup: This selectable feature allows the user to connect two (2) floats to the controller. These floats will be used to backup the level transducer should it fail. A high-level float condition will activate this feature, disable the transducer and start all available pumps. The pumps will continue to pump until the low-level float is tipped. From this point on, both floats will be used to start and stop all available pump(s). A manual reset is required to resume use of the level transducer. Both floats are required for float backup.

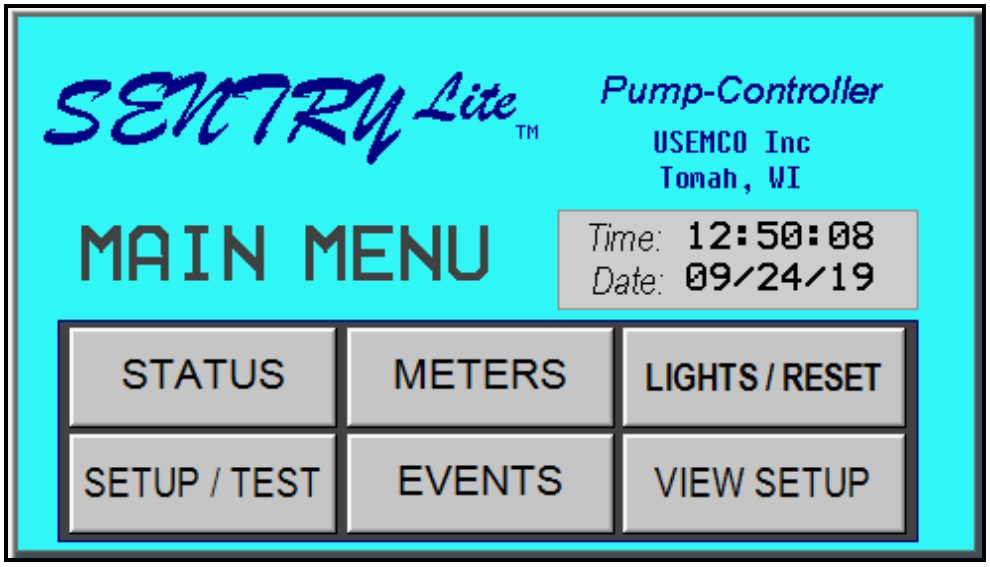
Analog Output: A 4-20mA analog output of the wet well level is available and can be used for additional monitoring.

Screen Illustration:

The following pages are examples of screen images from of the *SENTRY Lite* ™ pump controller. Each screen is provided with a short explanation.

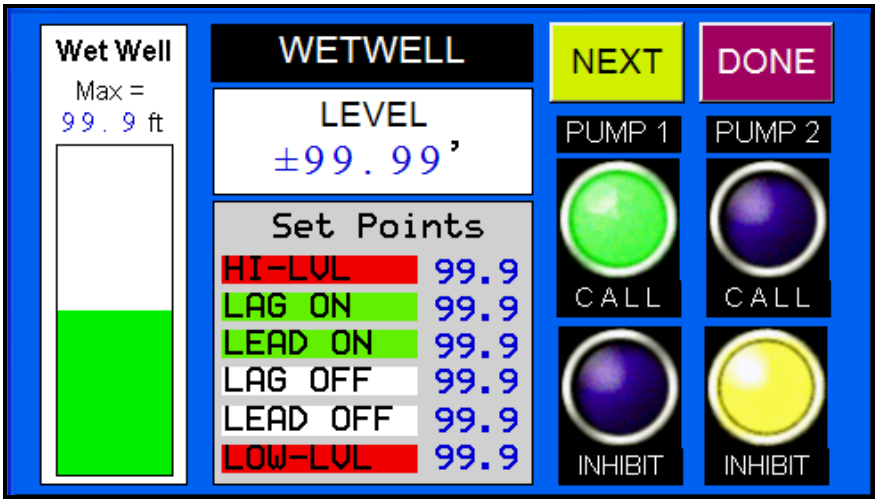
MAIN MENU

The Main Menu screen is used to navigate to other screens for control and monitoring functions. These include system status screen, password protected screens for entering and set points, timer values, and other configuration, screens for alarm events, a screen for resetting alarms and selecting pump-alternation. Note that the LIGHTS / RESET button will flash if an alarm is currently active. Also displayed is the current time & date.

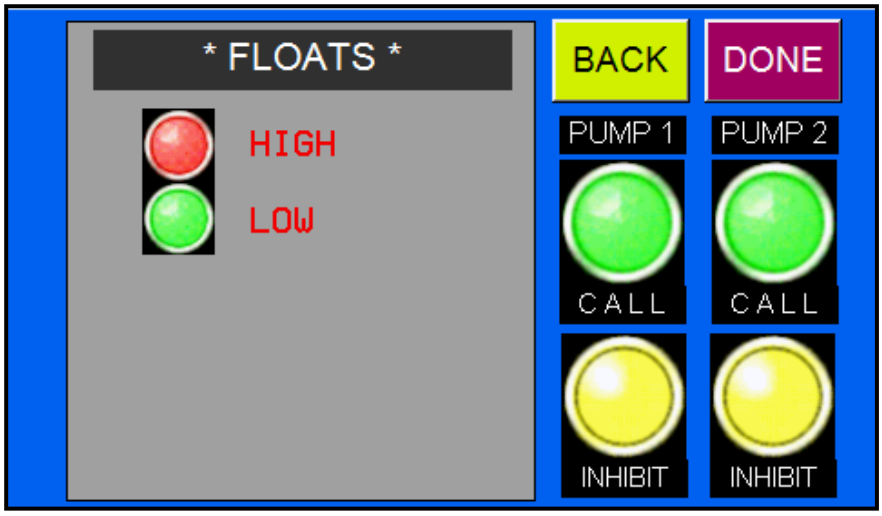


STATUS Screen(s)

These screens are designed to give the operator a general overview of the status of the system. It shows the level of the wet well (numeric & bar-graph), pump run & inhibits, set-points and a common alarm light. Touch the 'NEXT' button to display the float status screen. The current float status can be viewed from this screen if the 'backup float' option has been selected. If not selected, a 'NOT ENABLED' message will appear next to the float status display.

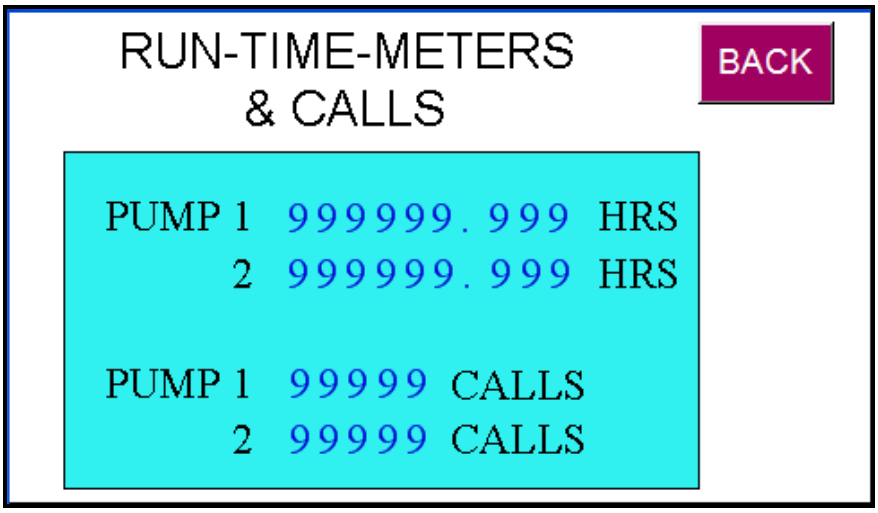


(NEXT)

- 

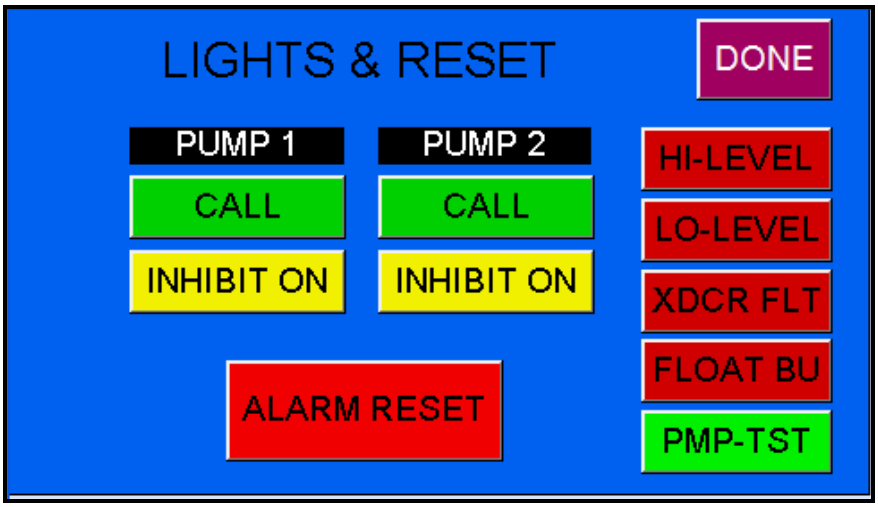
METERS Screen

This screen displays both pump's run-time (duration of the controller 'pump-call') and the number of pump-calls. The meters can be reset by accessing the secured, password protected screen. (* see meter-reset)



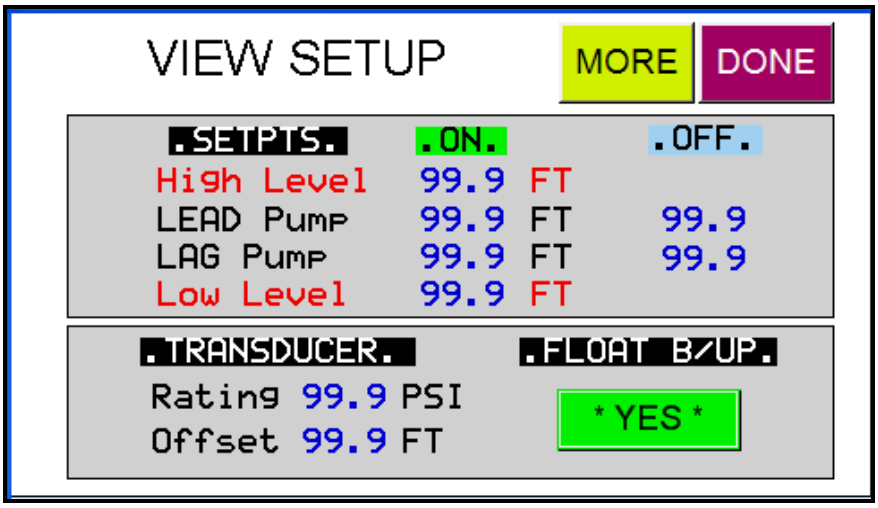
LIGHTS / RESET Screen

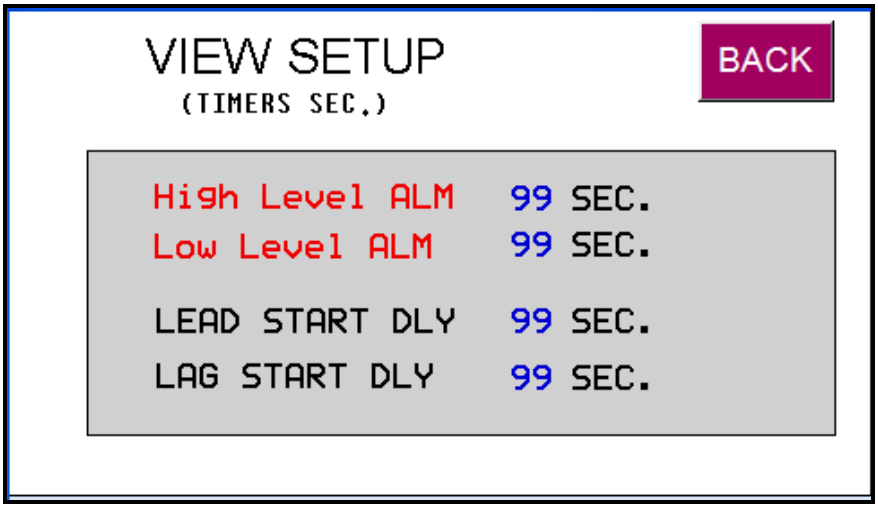
This screen is displayed by touching the 'LIGHTS / RESET' button on the Main Menu screen. Note that the LIGHTS / RESET button will flash if an actual alarm is active. Displayed on this screen are indicators representing possible system alarms and control/test status.



VIEW SETUP Screen

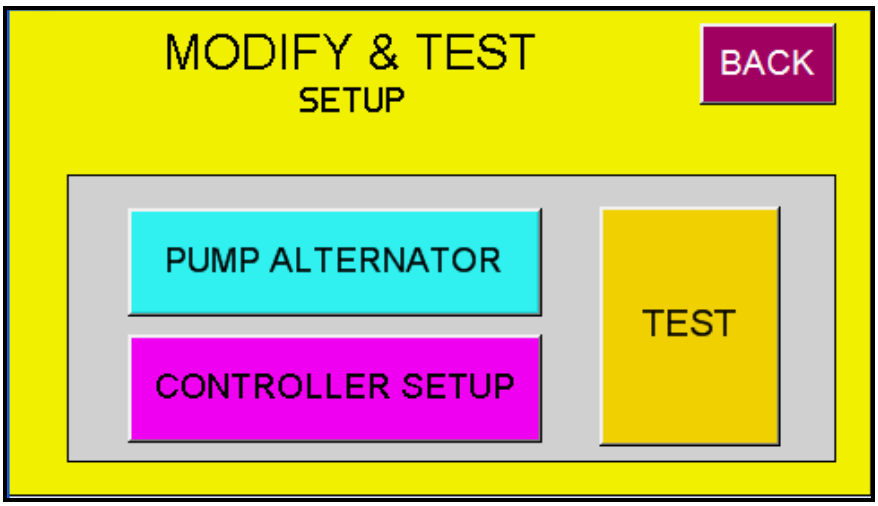
These screens are accessed by touching the **'VIEW SETUP.'** button on the Main Menu screen. These screens display the parameters (set-points, transducer rating & off-set, backup float feature status and timed-delays) of the system.





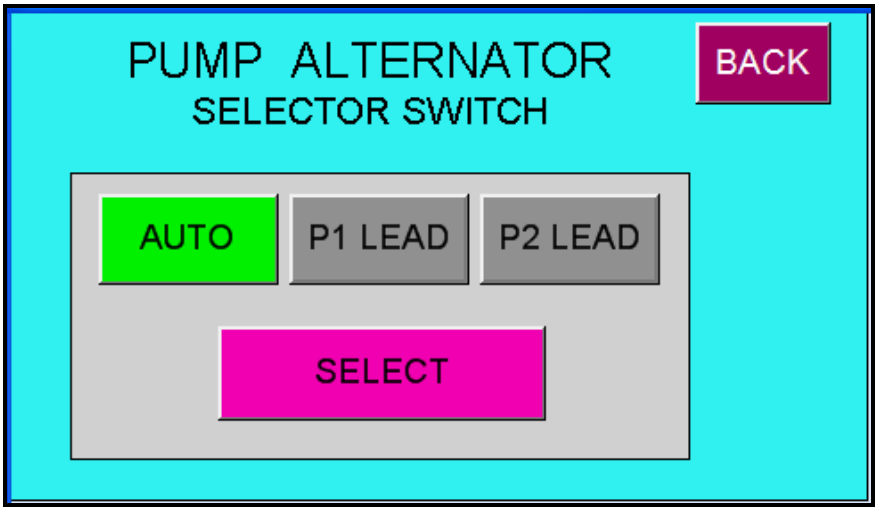
SETUP / TEST Screen

This screen is accessed by touching the **'SETUP / TEST'** button on the Main Menu screen. Two (2) selections allow the operator to setup the controller to 'fit' the pump-station requirement. They are Pump Alternator, Test and Controller Setup (password protected).



PUMP ALTERNATOR Screen

Touch the SELECT button to sequence thru '**AUTO**', '**P1 LEAD**' or '**P2 LEAD**'. Selecting AUTO will alternate the lead pump after each cycle. Selecting 'P1 LEAD' will always keep Pump 1 as the lead pump. And selecting 'P2 LEAD' will keep Pump 2 as the lead pump.



TEST Screen

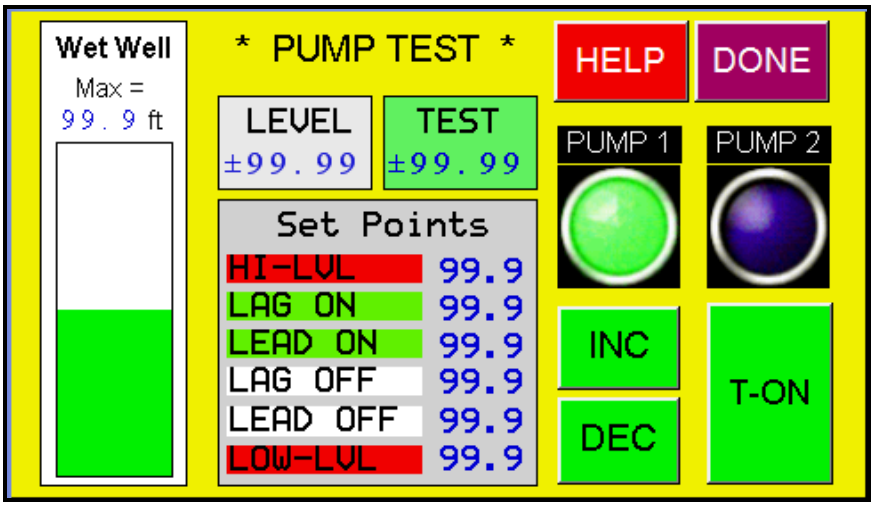
The controller's TEST pump feature simulates the transducer level to test pump operation and alarms. A vast amount of information and controls are placed on this one screen. System monitoring of the test and real-time (actual) values are critical and can be viewed all on this screen. They are: Pump Status lights
Pump and Alarm Set point values
Actual and 'simulated' test level reading
Common Alarm light

Screen Controls:
T-ON – **OFF** button will toggle to activate or turn-off this feature. An idle Active period (no change in level) of 60 seconds will automatically turn-off the test.

INC – use this button to 'raise' the simulated wet well level

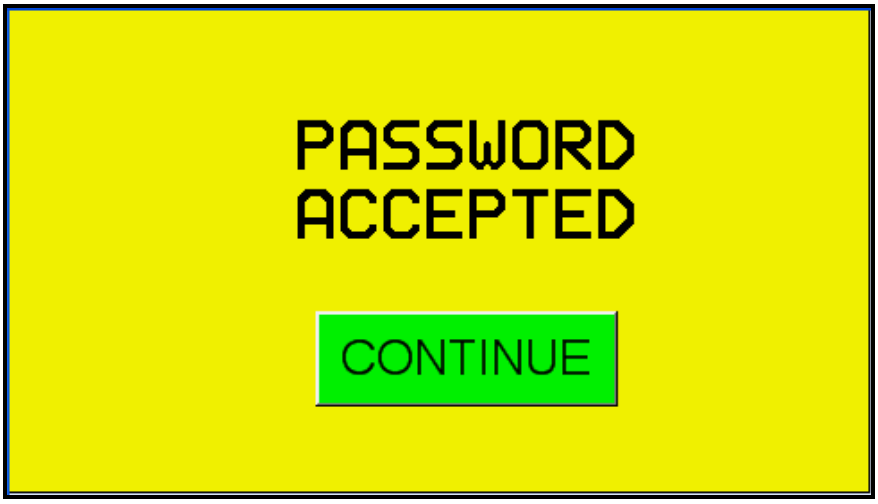
DEC – use this button to 'lower' the simulated wet well level

HELP – use this button to go to the 'help' screen for assistance



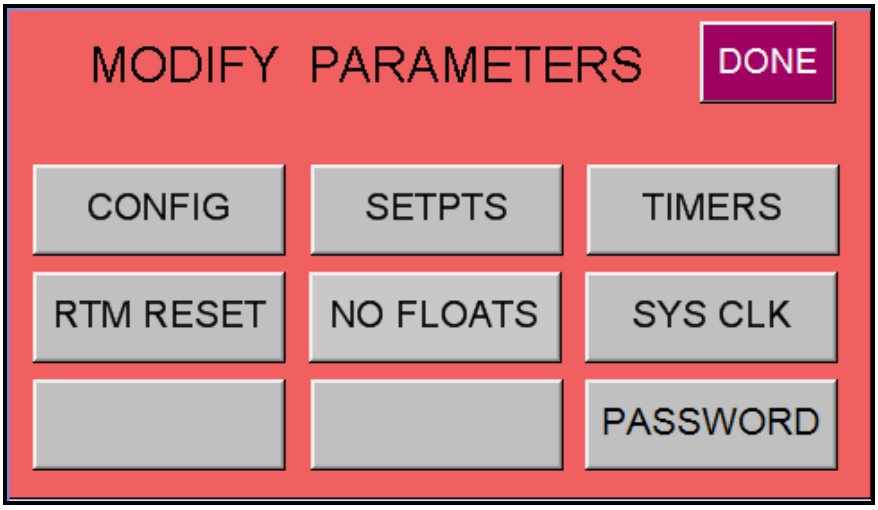
CONTROLLER SETUP (** password protected)

Touch the CONTROLLER SETUP button on the MODIFY & TEST SETUP screen. A 'Enter password' screen will appear with a numeric-entry keypad. Enter the correct password followed by touching the ENT button. A correct entry will display a PASSWORD ACCEPTED screen. Touch 'continue' to proceed. If an invalid password is entered, an 'Incorrect Password' message will appear.



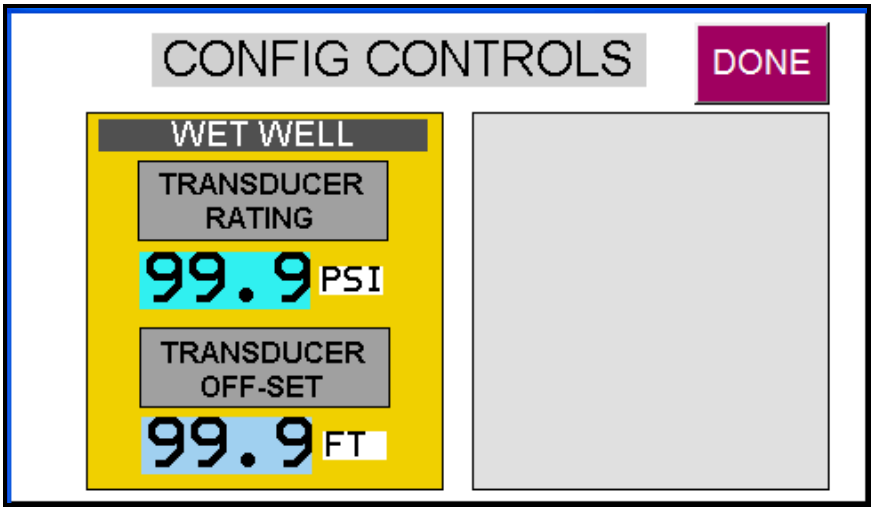
MODIFY PARAMETERS (**)

Seven buttons are available from this screen to enter specific system values such as transducer-rating, set-points, timer-delays, time & date calendar, meter resets and enabling / disabling the optional-floats.



CONFIG Screen

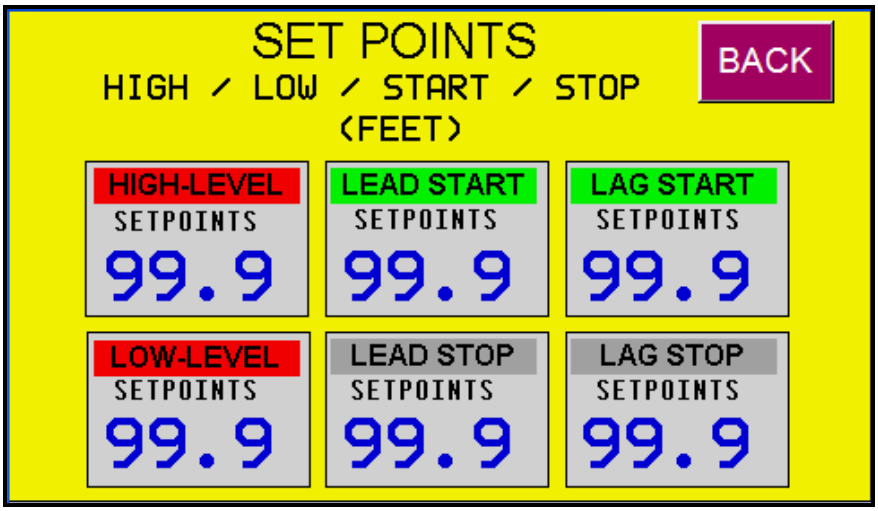
Enter the transducer rating by touching the displayed current-value. A numeric keypad will appear on the screen. Enter the desired value followed by touching the ENT button. The entered value will now be displayed. Touch the Transducer Off-set value to enter the 'off-set'. Use the keypad to enter the offset. Touch the 'DONE' button to return to the previous screen.



MODIFY SETPOINTS

From the ‘Modify Parameter’ screen, touch the ‘SETPNTS’ button to display the set point adjustment screen. Six adjustable set points are available and can be changed by touching the digit in each box. A numeric keypad will appear on the screen after touching the digit. Enter the desired value followed by the ENT button. After completing the changes, touch the BACK button to return to the Modify Parameter screen

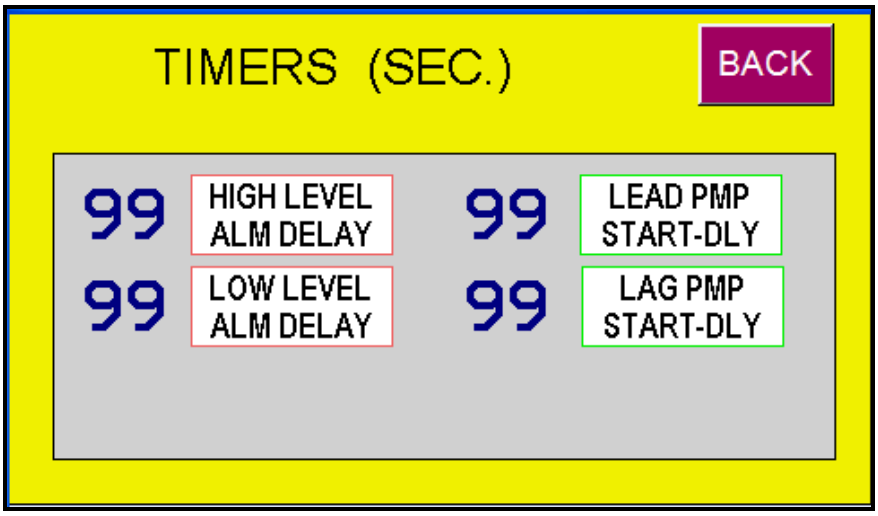
HIGH-LEVEL (wet well)
LOW-LEVEL (wet well)
LEAD-START (pump) level
LEAD-STOP (pump) level
LAG-START (pump) level
LAG-STOP (pump) level



TIMERS Screen

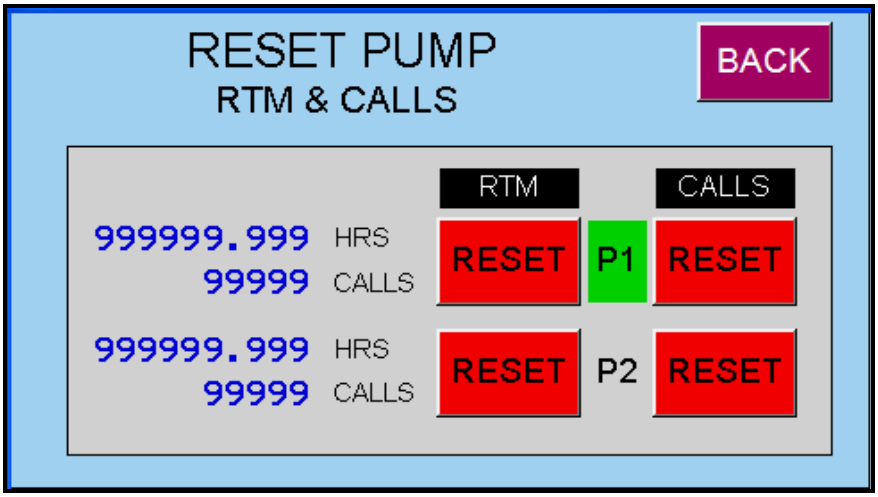
From the 'Modify Parameter' screen, touch the 'TIMERS' button to display the Timers screen. Four adjustable delays are available and can be changed by touching the digit in each box. A numeric keypad will appear on the screen. Enter the desired value, followed by the ENT button. Touch the BACK button to return to the Modify Parameter screen

HIGH LEVEL ALM DELAY (delay before activating alarm after the set point is reached)
LOW LEVEL ALM DELAY (delay before activating alarm after the set point is reached)
LEAD PMP START-DLY (delay start after the lead set point is reached)
LAG PMP START-DLY (delay start after the lag set point is reached)



RTM RESET Screen

From the ‘Modify Parameter’ screen, touch the ‘RTM RESET’ button to display the RESET PUMP RTM & CALLS screen. Touch the RESET button for each pump to reset the meter(s). Touch the BACK button to return to the ‘Modify Parameter’ screen.



Change PASSWORD Screen

From the ‘Modify Parameter’ screen, touch the ‘PASSWORD’ button to display the CHANGE PASSWORD screen. Touch the displayed Current Password number. A pop-up numeric keypad will appear. Input the ‘new’ four-digit password followed by the enter key. Note: Record the ‘new’ password in a safe location.

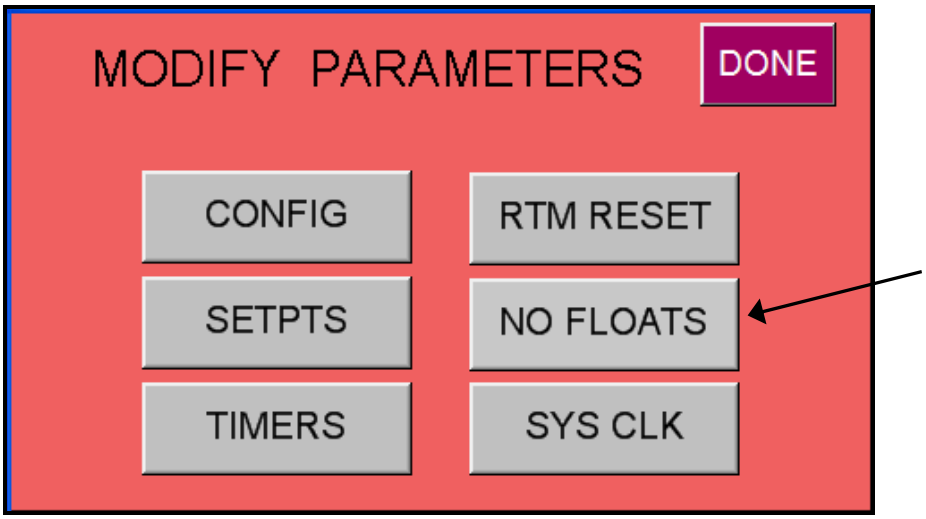
‘BACKUP’ FLOAT Option

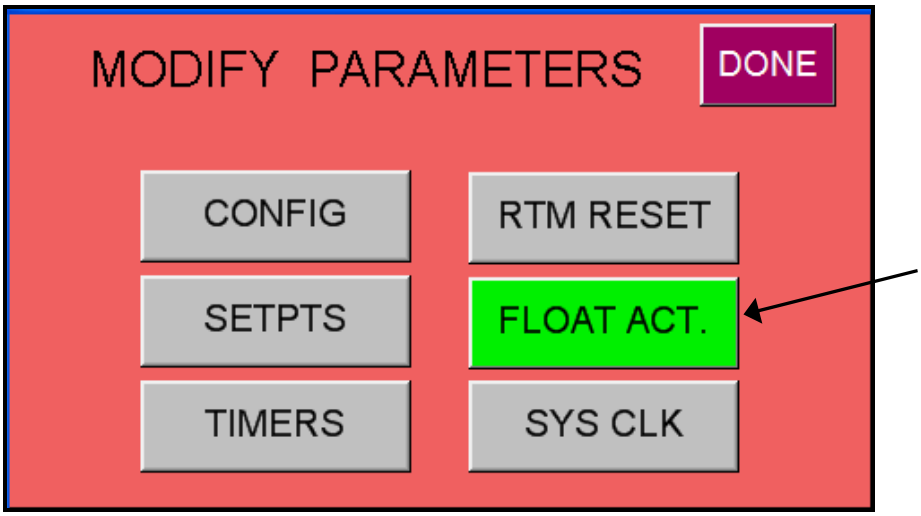
From the ‘Modify Parameter’ screen, touch the combination ‘NO FLOAT’ / ‘FLOAT ACT’ button to toggle the float-backup setting.

This selectable feature allows the user to connect two (2) floats to the controller. These floats will be used to backup the level transducer should it fail. A high-level float condition will activate this feature, disable the transducer and start all available pumps. The pumps will continue to pump until the low-level float is tipped. From this point on, both floats will be used to start and stop all available pump(s). A manual reset is required to resume use of the level transducer.

** Both floats are required for float backup.

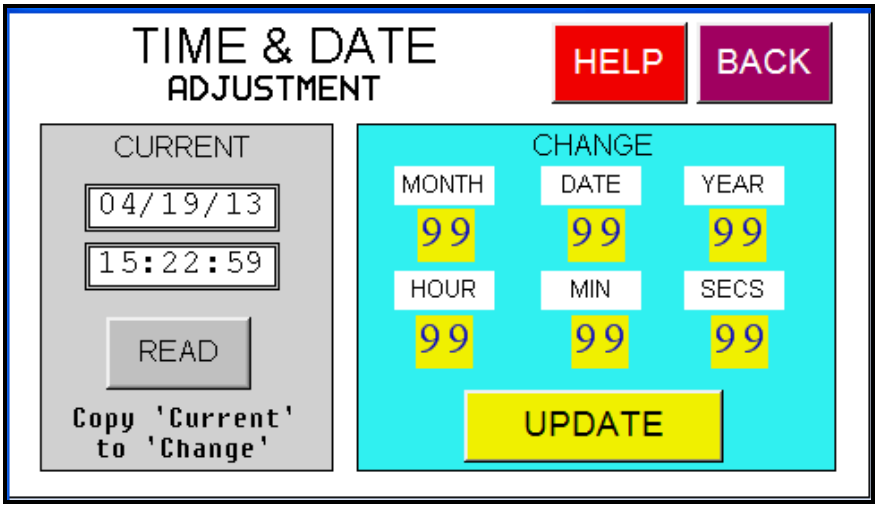
Touch the BACK button to return to the ‘Modify Parameter’ screen.

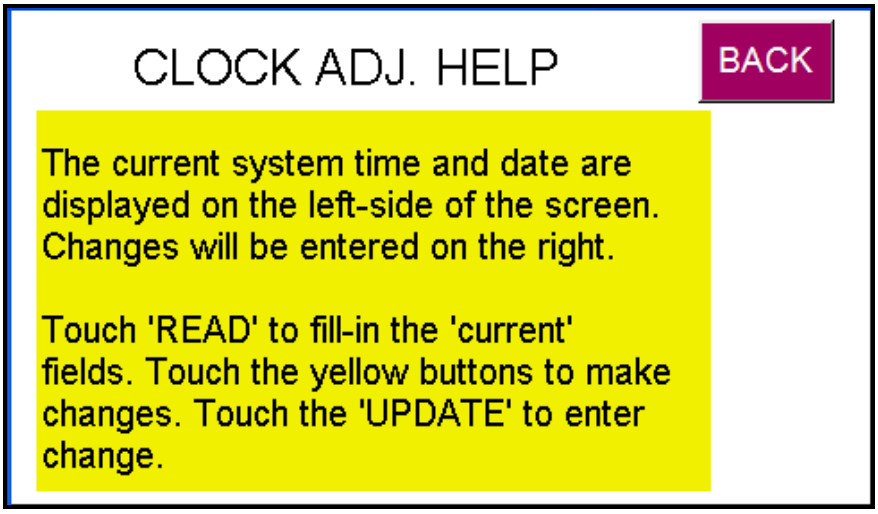



MODIFY PARAMETERS
DONE
CONFIG
RTM RESET
SETPTS
FLOAT ACT.
TIMERS
SYS CLK

SYS CLK Screen

From the ‘Modify Parameter’ screen, touch the SYS CLK button to display the TIME & DATE ADJUSTMENT screen. From this screen, the user can adjust the controller time and date. A ‘HELP’ button is available to assist with the setting. Touch the BACK button to return to the ‘Modify Parameter’ screen.

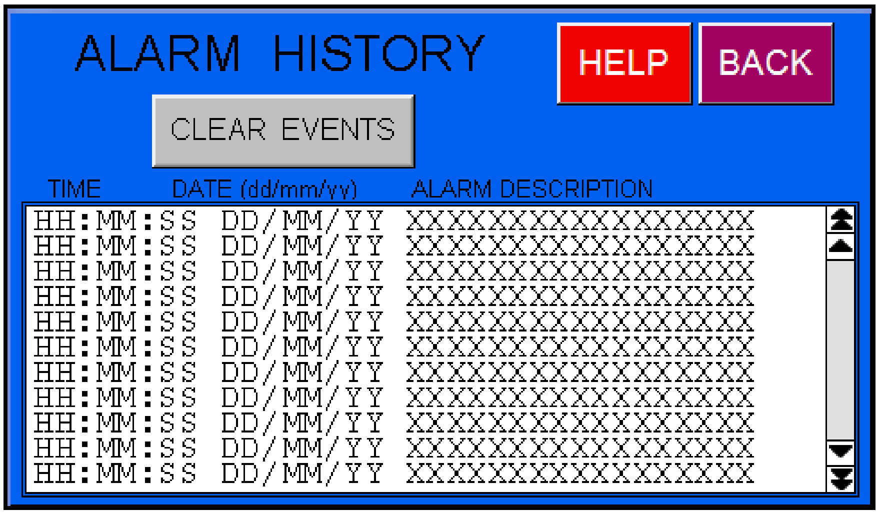




EVENT Screen

From the MAIN MENU screen, touch the EVENT button. All alarms will be logged and display on this screen. Each event will have a time and date stamp of when it occurred. Alarms occurring earlier on a 'full' screen can be viewed by using the 'up' and 'down' buttons. All entries in the log can be cleared by touching the CLEAR HISTORY button. Any alarm events that are cleared is lost and not recoverable.

A 'HELP' button is available that provides information on how to contact this pump controller manufacturer if additional information is needed.



SENTRY Lite ™ WORKSHEET

CONFIGURE CONTROLLER

	PARAMETER	RANGE	UNITS	SETTING
1.	Transducer Rating	0.0 to 99.9	PSI	_____
2.	Transducer Offset	0.0 to 99.9	FEET	_____
3.	Configure Floats	NO FLOATS FLOAT ACT		_____
4.	Pump Alternation	AUTO P1 - Lead P2 – Lead		_____

	TIMERS	RANGE	UNITS	SETTING
1	Lead Pump On-Delay	0 to 99	seconds	_____
2.	Lag Pump On-Delay	0 to 99	seconds	_____
3	High Alarm On-Delay	0 to 99	seconds	_____
4.	Low Alarm On-Delay	0 to 99	seconds	_____

SETPOINTS

	PARAMETER	ON Setpt.	UNITS
1.	HIGH LEVEL	_____	FEET
2.	LOW LEVEL	_____	FEET
3.	LEAD START	_____	FEET
4.	LEAD STOP	_____	FEET
5.	LAG START	_____	FEET
6.	LAG STOP	_____	FEET

Hardware Specifications:

Power:	24VDC +/- 10%, 8W max	Ports: 2 Serial:	RS232/RS485 (DB9)
Bezel:	IP 66 / (NEMA 4)	USB:	Prog/SCADA/device
Screen:	4.3" 480 x 272 pixel	Ethernet (opt.):	Modbus TCP/IP, Prog.
LCD Type:	TFT Color Touch screen	Operating Temperature:	0C to 50C
Colors:	32,000	Approvals:	CE, UL (Class 1 Div 2),
Backlight:	LED		RoHS compliant
Mounting:	Front Panel Mounting, IP66, N4/4X rated		

Digital Inputs: 12 DC inputs, Bi-directional (2 high-speed)
24 VDC (Max 30 VDC)
H/S Max input frequency 200 KHz

Digital Outputs: 8 Relay outputs
2 PNP

Analog Inputs: 2 (0-5V / 0-10V / 4-20mA / 0-20mA)
16-bit resolution

Analog Outputs: 1 (4-20mA / 0-20mA / 0-5V / 0-10V)
12- bit resolution