POWER ZONE

Power Zone Pump Controllers

INDUSTRIAL CONTROL EQUIPMENT

c UL US LISTED

Patent # 7,075,443 B1 Other Patents Pending

User's Manual

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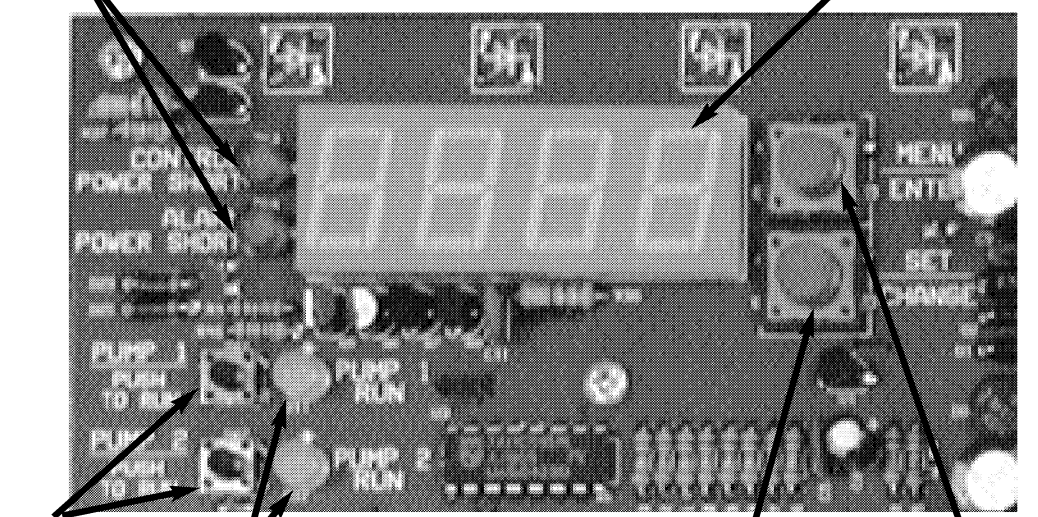
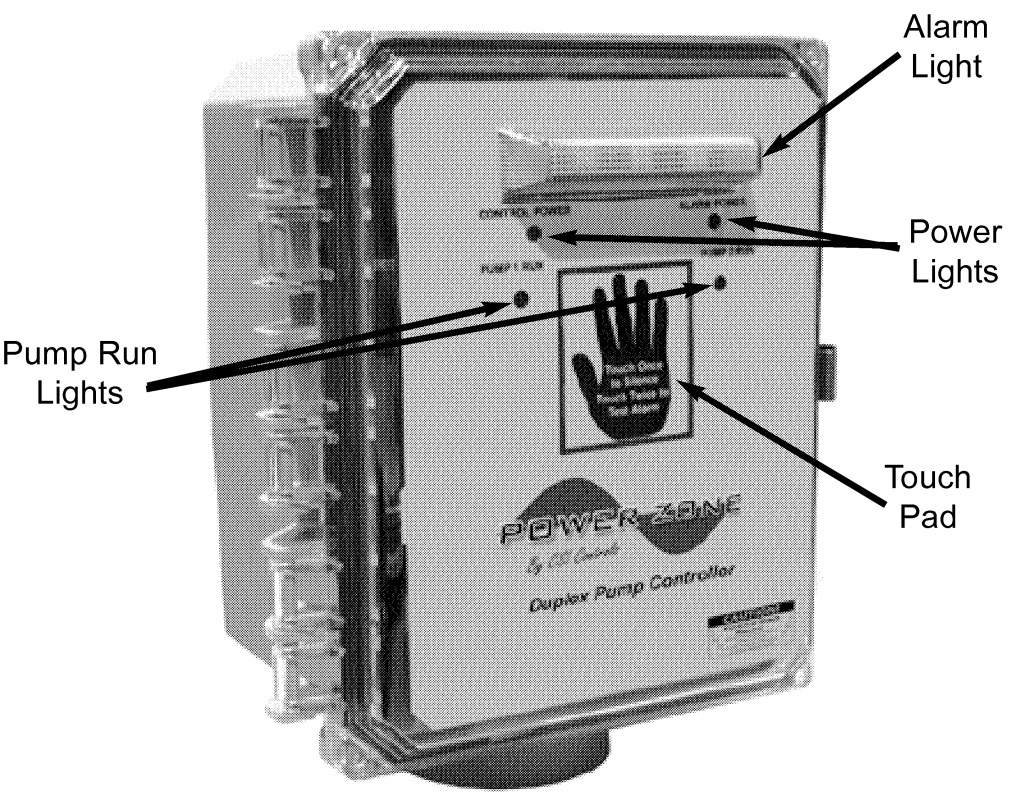
Panel Features

Control Center



Outer Door



Standard Features

Alternation and Lag Delay on the Duplex Controllers

On the duplex controller the level settings are labeled ON and LAG because there is a built-in alternator in the controller. The alternator cycles which pump is the lead pump after each PUMP RUN cycle, however, a permantent lead pump can be assigned in the LEAD menu. A non-adjustable delay causes the lag pump to wait ten seconds before turning on after the Lead Pump has turned on. This is useful during a power outage when the liquid level may reach the lag pump setting. The lead pump will turn on when power is restored and the lag pump will turn on ten seconds later.

Hand Run Buttons

Power Zone panels include push-to-run (HAND) pushbuttons for the motor outputs accessible on the circuit board below the power short indicators. The push-to-run (HAND) pushbuttons toggle their respective outputs off and on each time pushed under normal operation. However, to protect the pumps should the sump go below pump off float (in float panels) or the low level setting (in pressure panels), the HAND pushbuttons revert to momentary contact and must be held down to maintain their respective outputs on. This is a safety feature that keeps the pumps from running dry.

Zero Crossing

All CSI Power Zone products utilize “Zero Crossing” technology. This is a technology designed to reduce damage to relay contacts caused by high inrush loads. “Zero Crossing” refers to engaging the relay contacts near the point on the AC sine wave where the voltage crosses zero. This maximizes relay life when controlling inductive or capacitive loads and, therefore, increases the load capability of the relay.

Note: This technology is designed specifically for CSI relays.

Audible Alarm Circuitry

Power Zone panels come standard with an audible alarm and the patented front mounted “Touch Once to Silence / Touch Twice to Test Alarm” pad. With this feature the user is able to silence the audible by simply touching the hand on the front of the enclosure or touch it twice and hold to test the alarm.

Note: Touch with your entire hand (not just a finger).

Aux. Contact

The auxiliary alarm contact is an option that is included on the Power Zone “+” panels (see page 23). If your panel has this option it will have terminal blocks 17 & 18. This is an unfused dry contact rated for 120 VAC 5 amps max.

Standard Features

Fuse Trip Indicators

These lights are located to the left of the digital display (Control & Alarm Power Short). If a control or alarm power overload occurs an indicator will light up and the power light on the front of the door for that circuit will be off to indicate that the automatically resetable fuses have tripped. When the short (overload) is removed the fuse will automatically reset and normal operation will continue. However, if the power light is off and the power short light is not lit then that circuit is not getting any power.

Elapsed Time Meters

Power Zone provides Elapsed Time Meters as a standard feature. This information is accessed through the digital display. Just cycle through the display menu by pressing the Menu/Enter button. The Elapsed Time information is identified by "Et. 1" for pump 1 and "Et. 2" for pump 2 (Duplex Panel Only). Once you reach this field the information with alternate between the identifier "Et. 1" or "Et. 2" and the total elapsed run time for that pump in hours. Press the Set/Change button to view minutes and seconds.

Cycle Counters

Power Zone provides Cycle Counters as a standard feature. This information is accessed through the digital display. Just cycle through the display menu by pressing the Menu/Enter button. The Cycle Count information is identified by "CC. 1" for pump 1 and "CC. 2" for pump 2 (Duplex Panel Only). Once you reach this field the information with alternate between the identifier "CC. 1" or "CC. 2" and the total number of cycles the corresponding pump has run.

Alarms / Flash Codes

Alarm	LED Flash	Audible Flash	Other Indication
High Level	2 per sec.	2 per sec.	Aux. contact closed
Low Level	1 every 2 sec.	Chirp every sec.	X
Float Fail	2 every other sec.	2 every other sec.	Fail Indicated in "FLtS" menu
Timer Override	1 every 4 sec.	1 every 4 sec.	X
Alarm Power Fail	1 every 4 sec.	X	Power Short OFF Power Light OFF
Alarm Power Short	1 every 4 sec.	X	Power Short ON Power Light OFF
Control Power Short	1 every 4 sec.	1 every 4 sec.	Control Short ON Control Light OFF

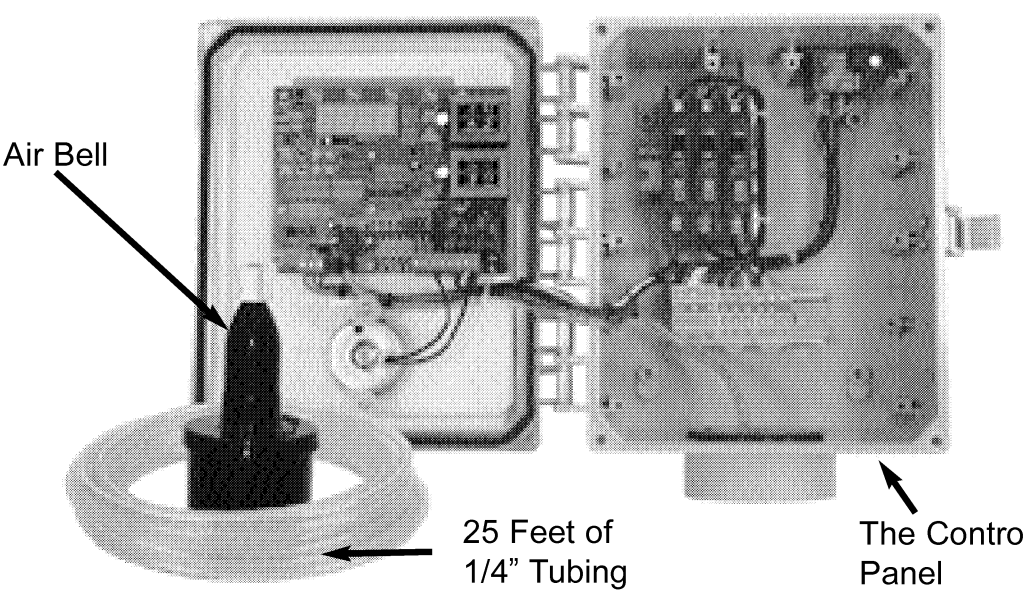
Pressure Systems

The Power Zone pressure systems allow the user to change all settings and adjustments outside of confined space with no electrical level system components in wet areas, no cords to tangle or adjust, no mercury, no mechanical switches to fail, no probes to corrode, and no venting required.

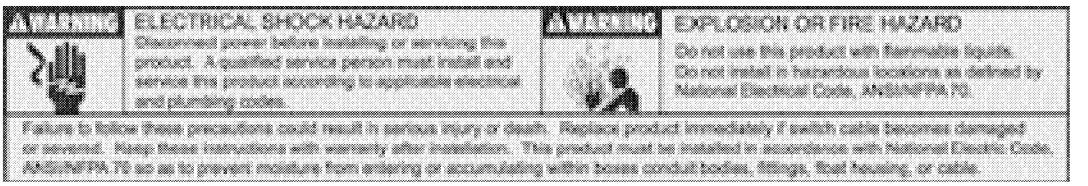
These systems combine the features of a pressure transducer, a pump controller with remote level settings and manual test / run switches. The duplex systems also include built in alternation, ten second lag pump delay, and separate lag pump on level setting. Because the pressure systems use the air bell to operate, they exceed intrinsically safe Class 1, Division 1 standards. The air bell transmits a pressure only signal to the controller so no voltage from the level sensing device enters the wet well. As the water level rises in the basin, pressure is created sending an air only signal to the controller. The higher the level in the basin gets, the more pressure that is created. Through the use of a control circuit board, conveniently located on the inside of the door, this system allows the user to adjust all settings to precise levels, in inches.

Important:
We strongly suggest that you read and understand this entire manual before installation. Proper installation will ensure trouble free operation of the system.

Standard Pressure Systems Include:

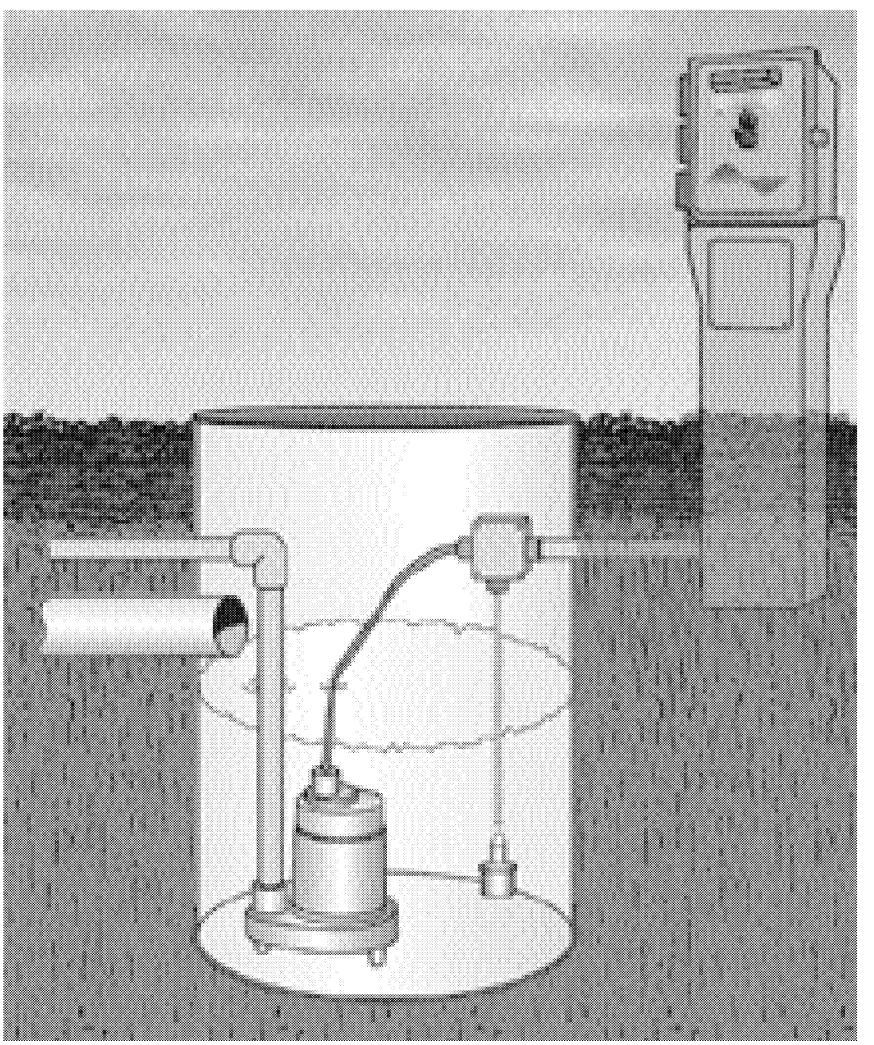


Pressure System Installation



Typical Simplex Pressure System Installation with Optional CSI Power Zone Pedestal

Note: Care should be taken to insure that sewage gases are not allowed to enter the control panel with an approved sealing means! **(Damage caused by sewage gas is not covered by warranty).**



Pressure System Installation Contd.

Step 1: Installing the Controller

1. Determine a mounting location for the panel.
2. Determine the location of the conduit(s) coming into the panel.
3. Drill holes in the panel for conduit entry unless you are using the optional 3 inch hole and rubber grommet.
4. Mount the panel using the provided mounting feet or the optional poly pedestal.
5. Bring the pressure tube and power wires into the panel through the conduit or pedestal.
6. Wire the panel according to the schematic included in the panel.

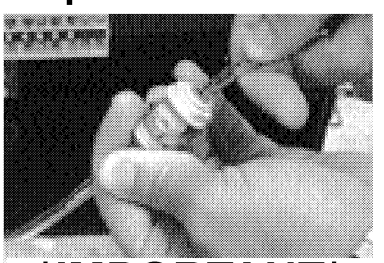
Step 2: Installing the Air Bell

1. Suspend the Air Bell by tie wrapping the tubing in various points along the path to the controller. **Note:** If the tubing needs to be shortened make sure it is cut cleanly and square.
2. We recommend running the the tubing inside of a conduit for protection.
3. Insert the tubing into the adapter inside the control panel.

IMPORTANT

The tube must be pushed into the adapter **5/8"**or the unit will not work correctly! Do Not remove the factory installed tubing from the air bell!

Step 3: Connect the Tubing to the Control Panel



IMPORTANT

The tube must be pushed into the fitting **5/8"** or the unit will not work correctly!

With the control panel mounted in a convenient location to the basin, attach the other end of the 1/4" poly tubing to the control panel. To help insure that your system does not leak air it is best to not cut or splice the tubing. Leave enough extra tubing coiled to allow the air bell to be removed for maintenance. If your installation requires cutting the tubing to exit a junction box make sure that you use the MPCF coupler fitting to insure a proper air seal!

Note 1: If the system losses pressure the most likely reasons are:

1) Tubing is not fully inserted into quick connectors
2) Tubing in quick connectors is not cleanly and squarely cut on the end
3) The tubing has been cut somewhere and is leaking air
4) No liquid in the basin - Possible siphon condition

Note 2: The pressure system works by measuring the total amount of liquid above the bottom of the air bell. If the tube is disconnected while the bell is submerged and then reconnected that level now becomes zero (0) inches of liquid. The system will then need to be recalibrated by either manually pumping down the liquid using the hand run button(s) or by lifting the air bell out of the basin BEFORE reconnecting the pressure tube. Make sure all water is out of the pressure tubing.

Pressure System Installation Contd

Step 4: Adjusting the Settings

With all the tubing connected and the air bell installed in the basin you are now ready to adjust your level settings. The ON and OFF settings of the pump(s), HIGH LEVEL alarm, and many other options are adjusted through the digital display. See the section of the manual on menus to help navigate through the programming. Remember, the inches are measured from the bottom of the air bell upward. You can also turn the pumps on manually by pushing the hand run button once to run and again to stop. (This button switches to momentary contact after low level setting is passed See Hand Run Buttons p.4). When the pumps are running in normal run mode they will run until they reach the Low Level point (3" non-adjustable). If the pumps need to be run further, the hand buttons can be held in until the desired depth is reached. These level settings are designed to work similar to a float system. On the simplex system if the PUMP ON setting is set below the PUMP OFF setting, the controller will turn the PUMP RUN light & a pump run contact both on and off at the PUMP OFF level setting. Similarly the duplex controller will turn on and off at the PUMPS OFF setting if the LEAD PUMP ON setting is below the PUMPS OFF setting. The HIGH LEVEL setting can be at any depth above your PUMP(S) OFF setting so that you can trigger an alarm at any desired level.

Remember: All settings are relative to the bottom of the air bell in the basin.

Pressure System Special Features

Redundant Run & High Level

The redundant run option reassures that the pump(s) will run even if the system loses pressure. To use the redundant on option connect a normally open float switch to terminals 7 & 8; otherwise do not connect to terminals 7 & 8 if you do not wish to use this feature. CSI recommends that a wide angle float is used for the Redundant Run Input.

Low Level Detection with Optional Alarm

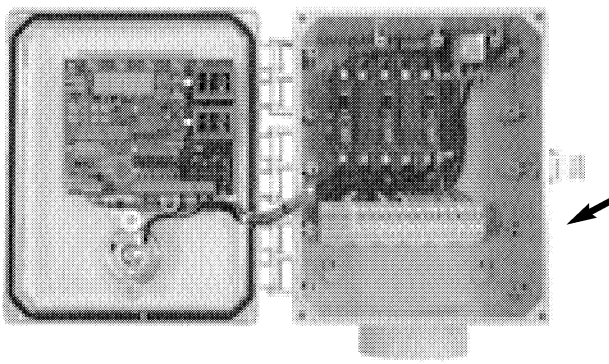
The Low Level Detection feature comes from the factory disabled. This feature may be activated through the "LCOP" under "LLAL." Once activated this feature will provide an alarm when the liquid level falls below 3 inches from the bottom of the air bell. The user may select how they would like to be notified of this condition.

Note: The minimum Pump(s) Off setpoint is 4 inches.

Float Systems

The Power Zone is an innovative approach to today's pump control system requirements with standard features unmatched by most competitors. The Power Zone offers a revolutionary design for housing common control panel features such as circuit breakers, relays, alarm light, audible and a terminal strip. Some standard features include: a lockable latch, flashing red LED alarm lights with an audible alarm, elapsed time, cycle count, and the innovative touch to silence/test pad all in a UL Type 4X enclosure. In addition to unsurpassed standard features the Power Zone offers an exclusive control circuit board. Conveniently located on the Inside of the Door the display center allows the user to see the status of each float and and enables the user to completely customize the operation of the panel. Available in simplex and duplex, these innovative controllers are certain to revolutionize the industry.

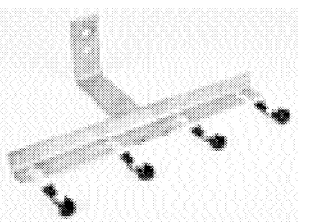
Standard Float Systems Include:



Floats Sold Separately

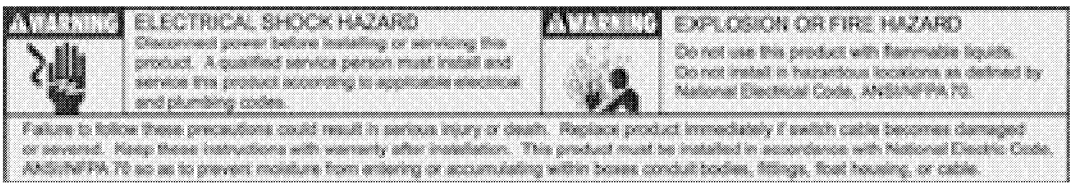
Available Float Mounting Options

Float Mounting Bracket



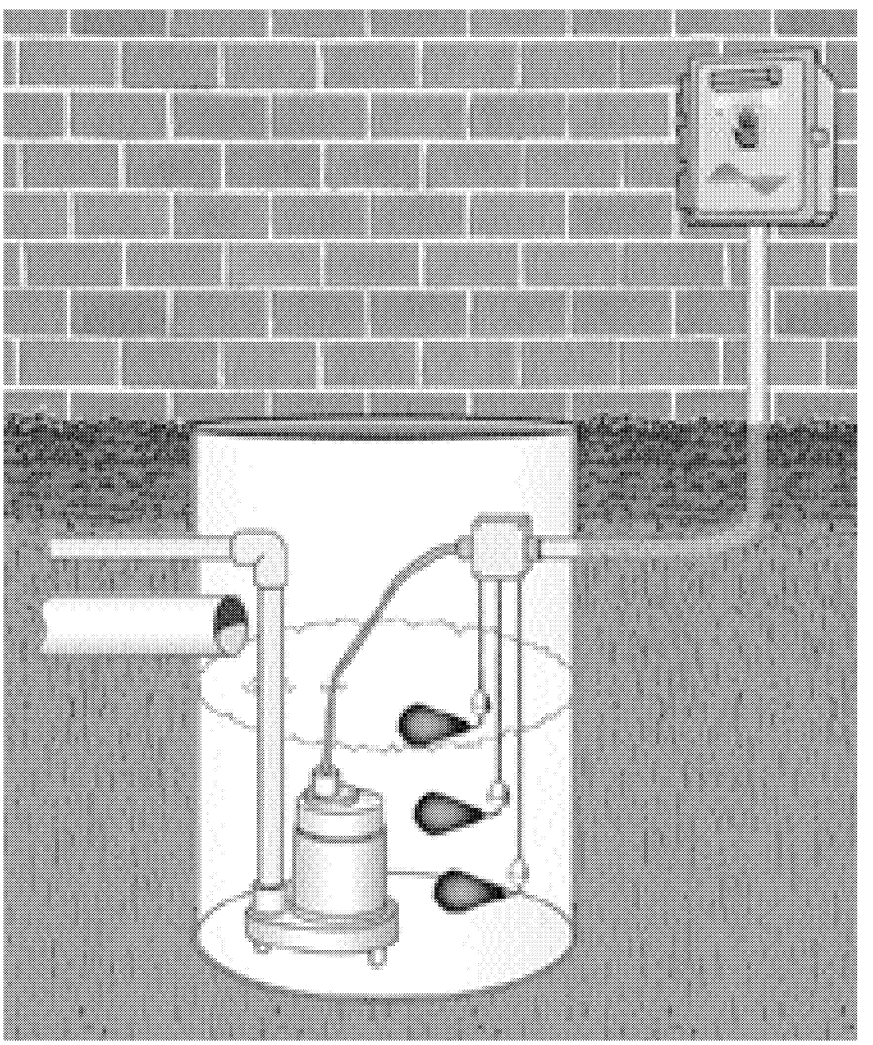
The installer may also choose to install the floats using one of our optional float mounting brackets w/cord snubbers and float weights.

Float System Installation



Note: Care should be taken to insure that sewage gases are not allowed to enter the control panel with an approved sealing means! **(Damage caused by sewage gas is not covered by warranty).**

Typical Simplex Float System Installation



Float System Installation Contd.

Installing the Controller

1. Determine a mounting location for the panel.
2. Determine the location of the conduit(s) coming in to the panel.
3. Drill holes in the panel for conduit entry.
4. Mount panel using the provided mounting feet or optional pedestal.
5. Bring the float and power wires into the panel through the conduit or CSI poly pedestal.
6. Wire the panel according to the schematic included in the panel.
7. Check installation by turning power on and manually tipping the floats or running up the water level to test for proper installation.
8. Test the unit periodically to ensure proper operation.

Redundant Off / Low Level Float Option

The redundant off float option reassures that the pump(s) will not run dry. To use the redundant off option connect a normally open float switch to terminals 7 & 8; otherwise install a jumper across terminals 7 & 8 if you do not wish to use this feature. When the float is in the open position the pumps will not be able to run except by using the hand run push buttons in momentary contact mode. This will also trigger a low level alarm if that feature is enabled in the programming.

Float Failure Routine

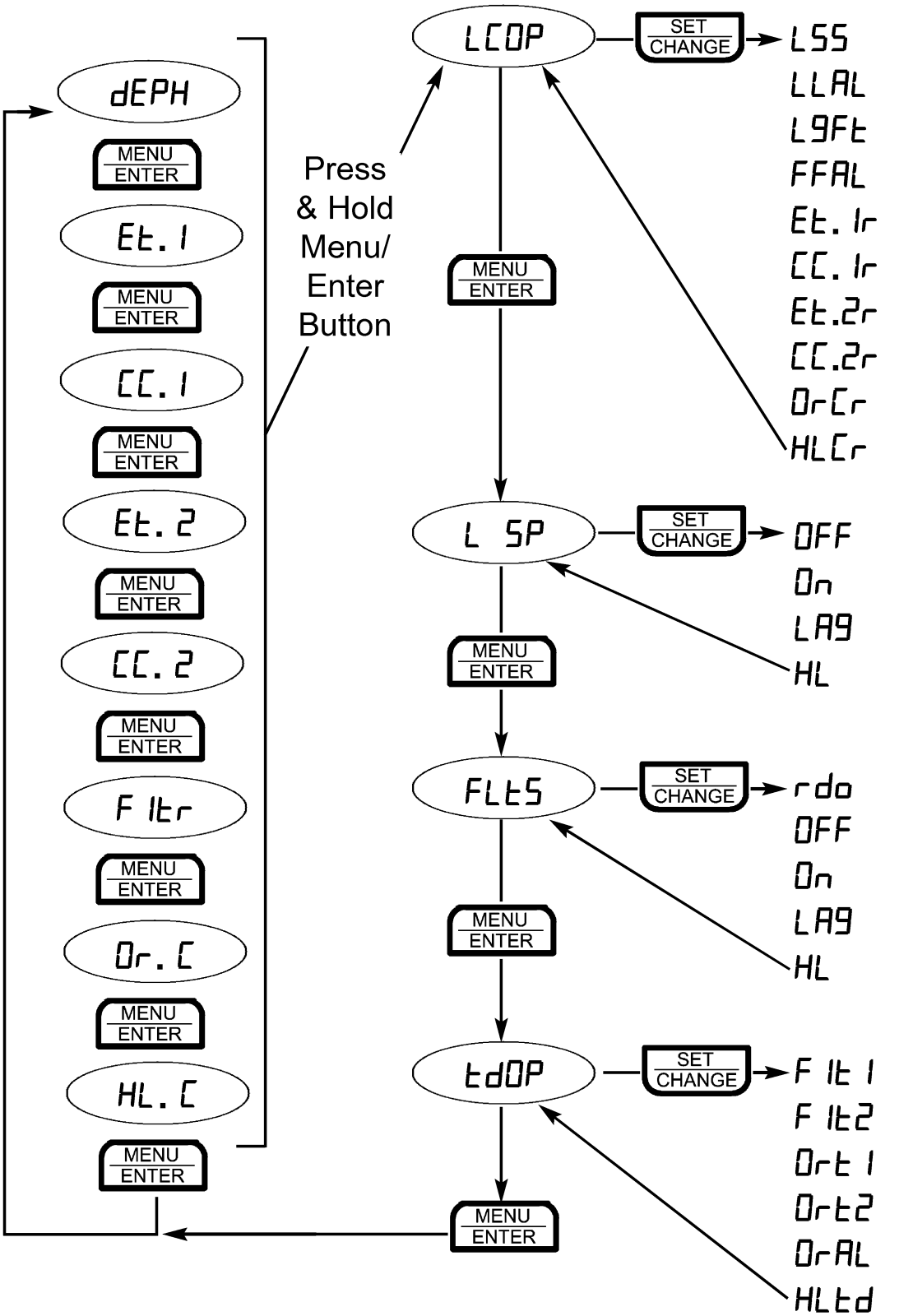
The Power Zone float controllers attempt to detect when a system float has failed. The controller does this by assuming the floats are hung in the correct order in the basin.

Expected Order of Floats in Basin

Simplex Panel		Duplex (or Time Dose) Panel
	(Expected order	High Level Float
High Level Float	can be swapped)	Lag (or Override) Float
On Float		Lead (or Enable) Float
Off Float		Off Float
Red. Off/Low Level Float	← (Optional) →	Red. Off/Low Level Float

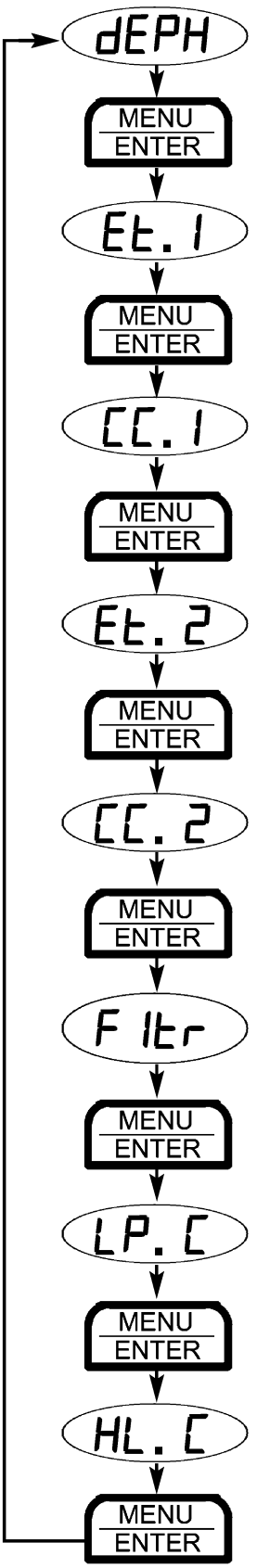
The program looks for a float to change its state from Open to Closed, and assumes that a changing state indicates that the float is working. The program then looks at the state of the other floats to see if they are Open or Closed as expected. If a float is not in the expected state the program marks that float as failed. The failure for the float will be cleared if its state ever changes, or if power is cycled and the problem is corrected. The float failure can optionally cause an alarm (see Alarm/Flash Codes section and the "FFAL" menu setting for more details. Also, on a duplex panel or time dose panel the expected order for the High Level float and the Lag (or Timer Override) float can be swapped, see "LOFt" setting for a duplex panel or "OrFt" for a Time Dose panel.

Complete Menu Structure



Menus

Display Menu



Press Menu/Enter Button to change between menu fields

Note: Your Panel May Not Have All the Fields Shown. This Panel has All Available Options.

dEPH - (Depth, Pressure type panels only):
Reads out liquid level in inches.
(Max Range: 42.00")

Et.# - (Elapsed Time, # is Pump number (1 or 2)):
Reads out the total elapsed run time of the corresponding pump. (Max Time: 9999 hrs)
Press Set/Change button to alternate between hours and minutes & seconds

CC.# - (Cycle Counter, # is Pump number (1 or 2)):
Reads out the number of cycles the corresponding pump has run.
(Max Value: 9999)

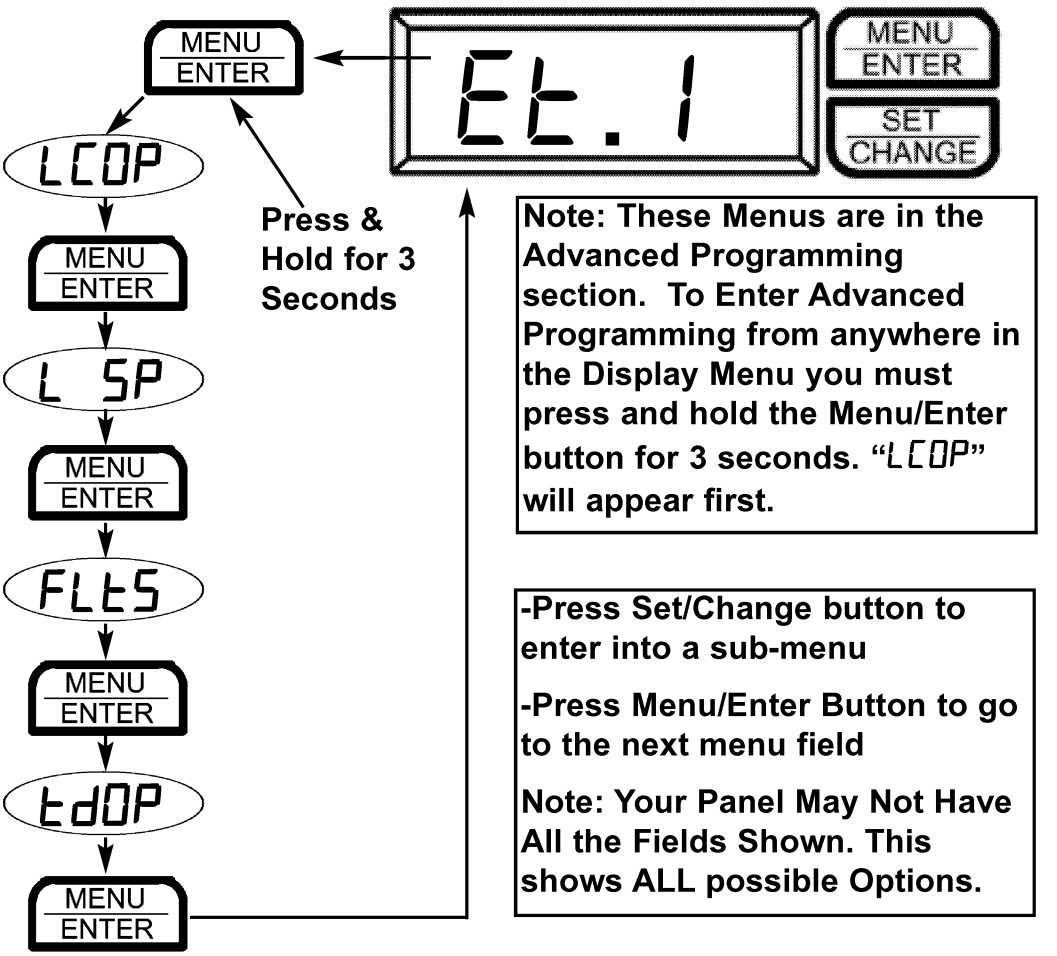
F ltr - (Field 1 Timer (Time Dose only)):
Reads out the remaining time in the current time cycle. If the pump(s) are running then it indicates the time remaining until the pump(s) shut off (MM:SS). If the pump(s) are off then it indicates time remaining until the pump(s) are able to run again (HH:MM).

Or.C - (Override Counter (Time Dose Only)):
OR
LP.C - (Lag Pump Counter (Duplex Only)):
Reads out the number of times the Lag Pump has run. (Max Value: 9999)

HL.C - (High Level Counter):
Reads out the number of times the system has reached the High Level Point. (Max Value: 9999)

Menus

Settings Menu



LCOP - (Level Control Options): (Page)

Press Set/Change button to change this field.
Press Menu/Enter button to move to the next field.

L SP - (Level Set Points (Pressure Panels Only)): (Page)

Press Set/Change button to change this field.
Press Menu/Enter button to move to the next field.

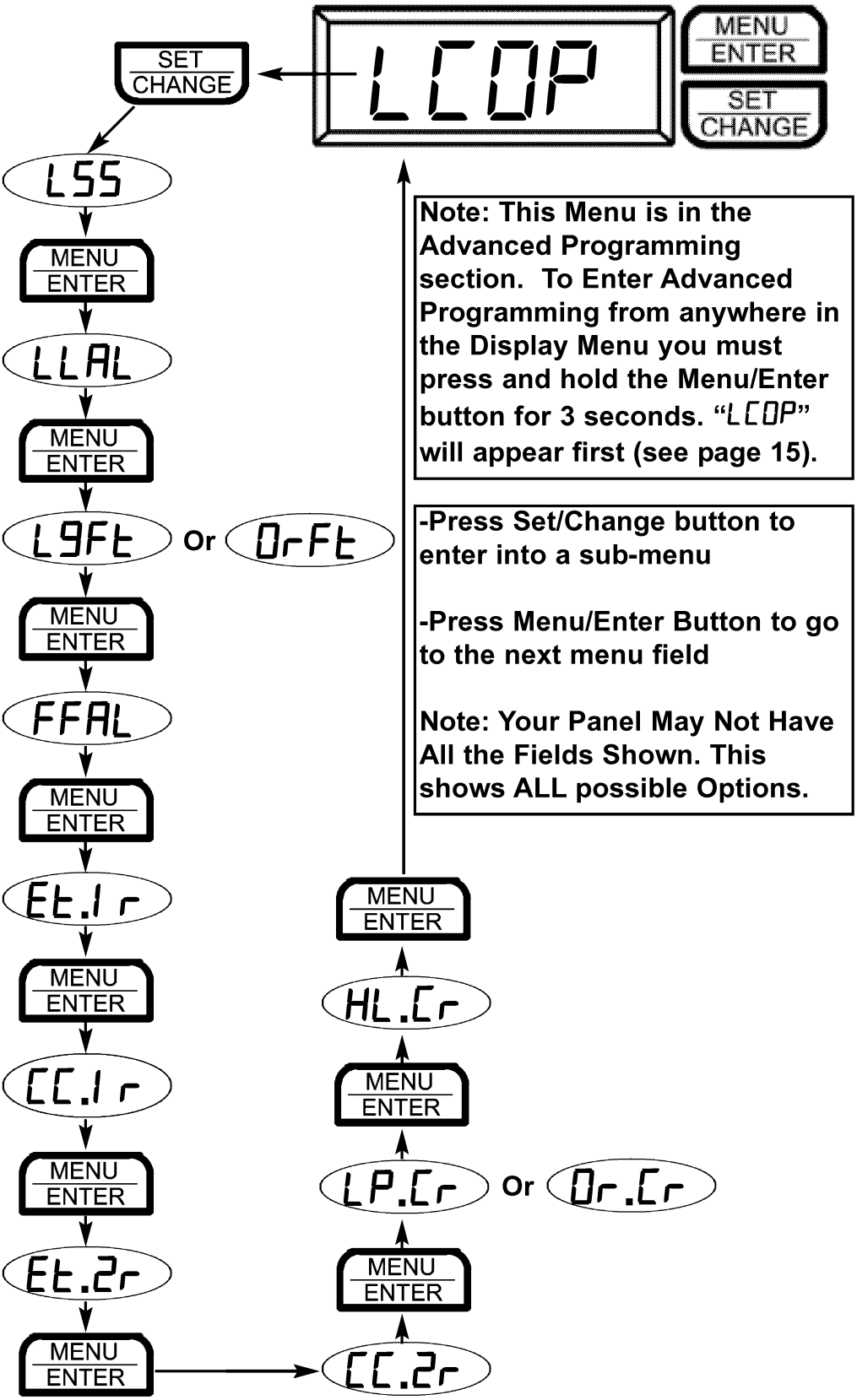
FLtS - (Floats Status (Float Panels Only)): (Page)

Press Set/Change button to change this field.
Press Menu/Enter button to move to the next field.

tdOP - (Time Dose Options (Time Dose Panels)): (Page)

Press Set/Change button to change this field.
Press Menu/Enter button to move to the next field.

Level Control Options Menu Structure



LSS - (Lead Selection Setting (Duplex Panels Only)):

Diplay will alternate showing "LSS" and the current Value.

Press Set/Change button to change this field.

Possible Settings:
0 = Alternate Between Pumps (Default)
1 = Pump #1 Always is Lead Pump
2 = Pump #2 Always is Lead Pump

LLAL - (Low Level Alarm Setting (Pressure page 9, Float page 12)):

Display will alternate showing "LLAL" and the current value.

Press Set/Change button to change this field.

Possible Settings:
0 = Low Level Alarm Off (Default)
1 = Flash Alarm Light only
2 = Flash Alarm Light and sound audible

OrFt - (On Float/Override Float Order (Time Dose Panels Only)):

OR

LgFt - (Lag Float/High Level Float Order (Duplex Float Panels Only)):

Display will alternate showing "LgFt" and the current value.

Press Set/Change button to change this field.

Possible Settings: (Default is "0")
0 = Lag Float is Hung Below High Level Float
1 = High Level Float is Hung Below Lag Float

FFAL - (Float Failure Alarm (Float Panels Only)):

Display will alternate showing "FFAL" and the current value.

Press Set/Change button to change this field.

Possible Settings:
0 = Float Failure Alarm Off (Default)
1 = Flash Alarm Light only
2 = Flash Alarm Light and sound audible

Et.Ir - (Elapsed Time Pump 1 Reset):

Display will alternate showing "Et.Ir" and the value "0."

Press Set/Change button to change this field.

Possible Settings:
0 = Do Not Reset Elapsed Time Pump 1
1 = Reset Elapsed Time Pump 1 to 0

Level Control Options Menu Definitions Continued

CC. Ir - (Cycle Count Pump 1 Reset):

Display will alternate showing "CC. Ir" and the value "0."

Press Set/Change button to change this field.

Possible Settings:

0 = Do Not Reset Cycle Count Pump 1

1 = Reset Cycle Count Pump 1 to 0

Et.2r - (Elapsed Time Pump 2 Reset (Duplex Panels Only)):

Display will alternate showing "Et.2r" and the value "0."

Press Set/Change button to change this field.

Possible Settings:

0 = Do Not Reset Elapsed Time Pump 2

1 = Reset Elapsed Time Pump 2 to 0

CC.2r - (Cycle Count Pump 2 Reset (Duplex Panels Only)):

Display will alternate showing "CC.2r" and the value "0."

Press Set/Change button to change this field.

Possible Settings:

0 = Do Not Reset Cycle Count Pump 2

1 = Reset Cycle Count Pump 2 to 0

Or.Cr - (Override Count Reset (Time Dose Panels Only)):

OR

LP.Cr - (Lag Pump Count Reset (Duplex Panels Only)):

Display will alternate showing "LP.Cr" and the value "0."

Press Set/Change button to change this field.

Possible Settings:

0 = Do Not Reset Lag Pump Counter

1 = Reset Lag Pump Counter to 0

HLCr - (High Level Count Reset):

Display will alternate showing "HL.Cr" and the value "0."

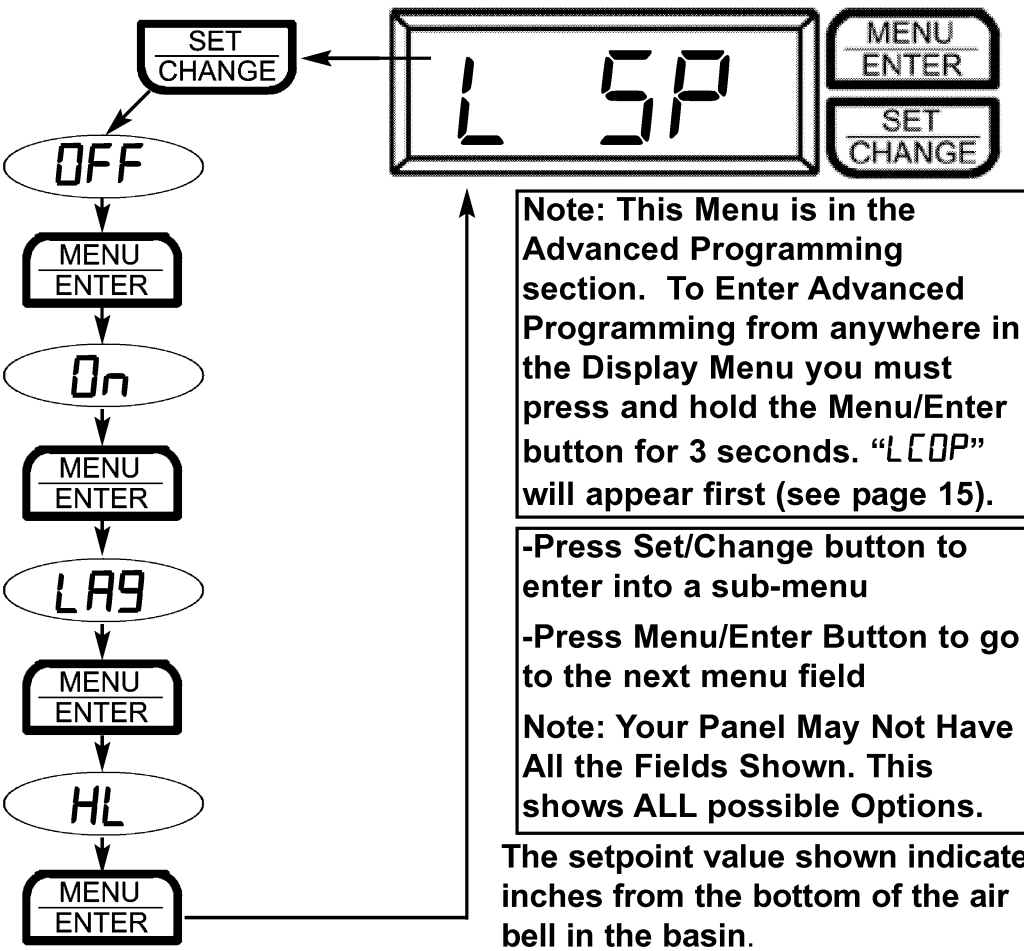
Press Set/Change button to change this field.

Possible Settings:

0 = Do Not Reset High Level Counter

1 = Reset High Level Counter to 0

Level Set Point Menu (Pressure Activated Systems Only)



Note: This Menu is in the Advanced Programming section. To Enter Advanced Programming from anywhere in the Display Menu you must press and hold the Menu/Enter button for 3 seconds. "LCOP" will appear first (see page 15).

-Press Set/Change button to enter into a sub-menu

-Press Menu/Enter Button to go to the next menu field

Note: Your Panel May Not Have All the Fields Shown. This shows ALL possible Options.

The setpoint value shown indicates inches from the bottom of the air bell in the basin.

OFF - (Pump(s) Off Setpoint in inches):

Display will alternate showing "OFF" and the current value.

Press Set/Change button to change this field.
Press Menu/Enter button to move to the next field.

On - (Pump 1 On Setpoint in inches):

Display will alternate showing "On" and the current value.

Press Set/Change button to change this field.
Press Menu/Enter button to move to the next field.

LAG - (Lag Pump On Setpoint in inches (Duplex Panels Only)):

Display will alternate showing "LAG" and the current value.

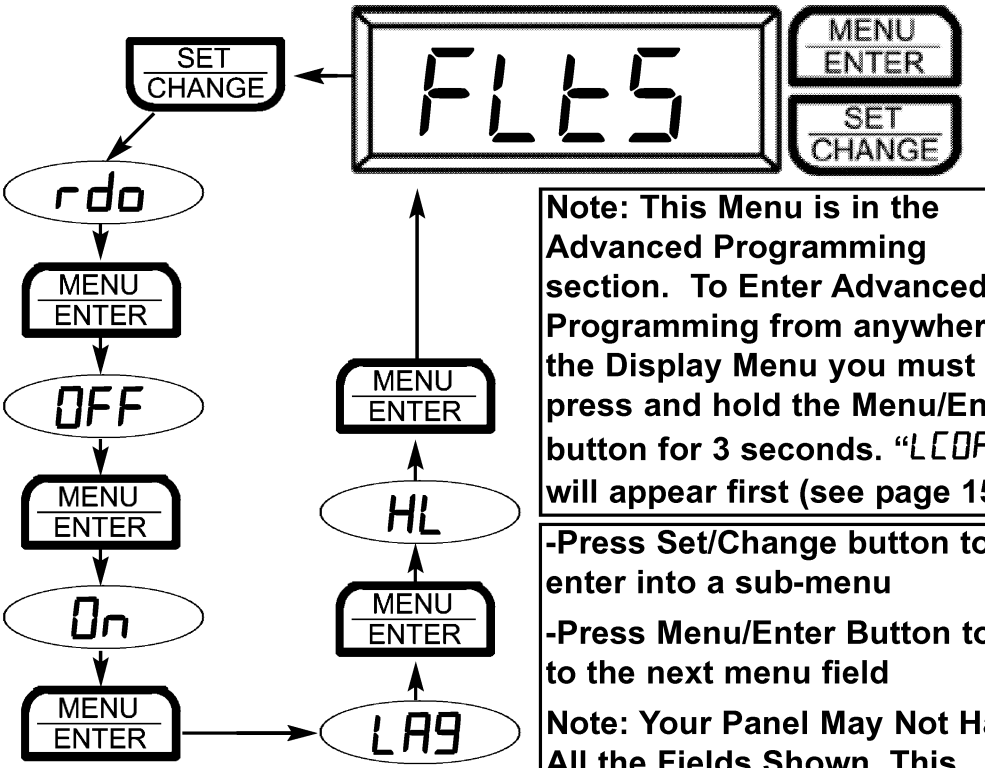
Press Set/Change button to change this field.
Press Menu/Enter button to move to the next field.

HL - (High Level Alarm Setpoint in inches):

Display will alternate showing "HL" and the current value.

Press Set/Change button to change this field.
Press Menu/Enter button to move to the next field.

Float Status Menu (Float Panels Only)



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-Press Set/Change button to enter into a sub-menu

-Press Menu/Enter Button to go to the next menu field

Note: Your Panel May Not Have All the Fields Shown. This shows ALL possible Options.

Float Status Readings:

OPEn - Circuit is Open CLSd - Circuit is Closed FAIL - Float Failed

This Menu is for viewing float status *only.* No settings can be changed.

rdo - (Redundant Off Float Status):

Display will alternate showing "rdo" and the current status.

Press Menu/Enter button to move to the next field.

OFF - (Pump(s) Off Float Status):

Display will alternate showing "OFF" and the current status.

Press Menu/Enter button to move to the next field.

On - (Pump 1 On Float Status):

Display will alternate showing "On" and the current status.

Press Menu/Enter button to move to the next field.

LAG - (Lag Pump On Float Status (Duplex Only)):

Display will alternate showing "LAG" and the current status.

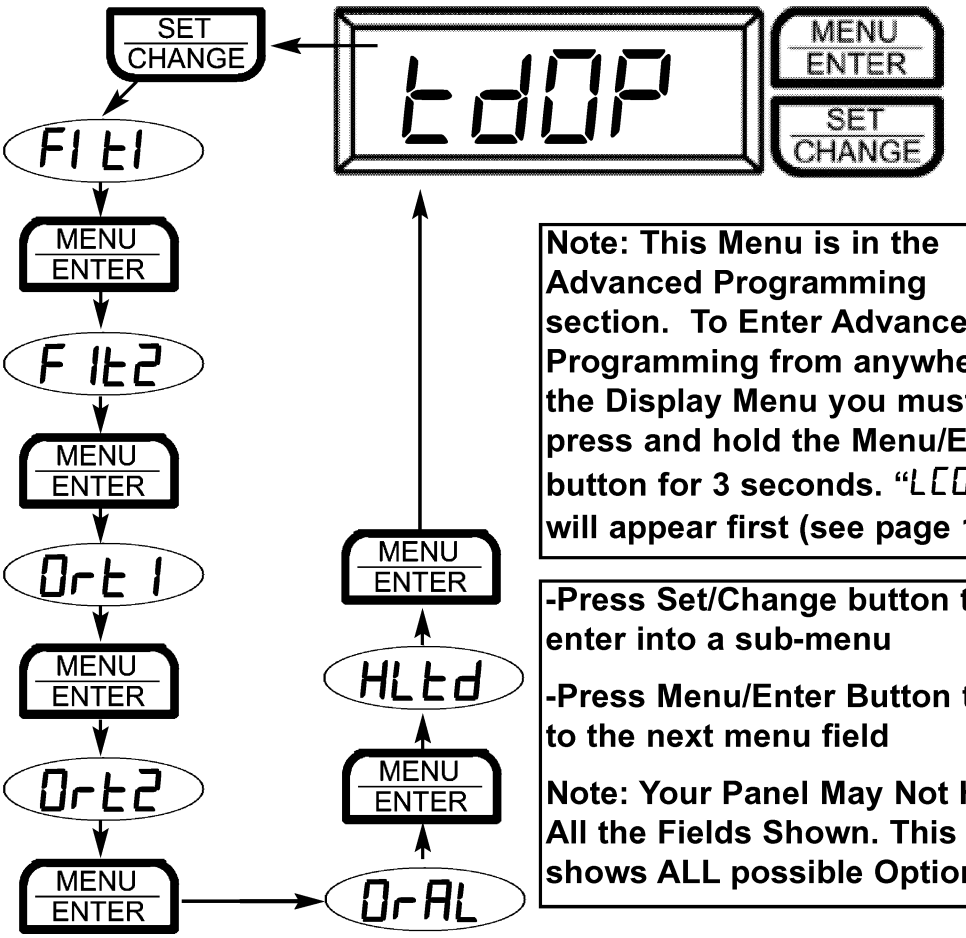
Press Menu/Enter button to move to the next field.

HL - (High Level Alarm Float Status):

Display will alternate showing "HL" and the current status.

Press Menu/Enter button to move to the next field.

Time Dose Menu (Time Dose Panels Only)



Note: This Menu is in the Advanced Programming section. To Enter Advanced Programming from anywhere in the Display Menu you must press and hold the Menu/Enter button for 3 seconds. "LCOP" will appear first (see page 15).

-Press Set/Change button to enter into a sub-menu

-Press Menu/Enter Button to go to the next menu field

Note: Your Panel May Not Have All the Fields Shown. This shows ALL possible Options.

F 1t 1 - (Field 1 Time 1 (Pump Enable Time Setting))

This is the amount of time the pump will be enabled to run once the level reaches the "On" setpoint. Note: If the level reaches the pump off setpoint before time expires, the pump will shut off and the Pump Disable time will begin.

Display will alternate showing "F 1t 1" and the current value.

Time shown is in [Minutes : Seconds] (Default Time- 05:00)

Press Set/Change button to change this field.

Press Menu/Enter button to move to the next field.

F 1t2 - (Field 1 Time 2 (Pump Disable Time Setting))

This is the amount of time the pump must wait after it completes a run cycle before it may run again. Note: If the level reaches the override (lag) setpoint the pump will begin to run regardless of Pump Disable Time.

Display will alternate showing "F 1t2" and the current value.

Time shown is in [Hours : Minutes] (Default Time- 01:00)

Press Set/Change button to change this field.

Press Menu/Enter button to move to the next field.

Note: To Disable Time Dose Operation Set this Field to "00.00".

Time Dose Menu Continued (Time Dose Panels Only)

OrE 1 - (Override On Time (Pump Enable Time Setting))

This is the amount of time the pump will be enabled to run once the level reaches the override setpoint at which time the system enters Override Time Dosing mode.

Display will alternate showing "OrE 1" and the current value.
Time shown is in [Minutes : Seconds] (Default Time- 05:00)
(Maximum time setting is 99:59)

Press Set/Change button to change this field.
Press Menu/Enter button to move to the next field.

Note: To Disable Override Operation Set this Field to "00.00".

OrE2- (Override Off Time (Pump Disable Time Setting))

This is the amount of time the pump must wait after it completes an Override run cycle before it may run again.

Display will alternate showing "OrE2" and the current value.
Time shown is in [Hours : Minutes] (Default Time- 00:30)
(Maximum time setting is 99:59)

Press Set/Change button to change this field.
Press Menu/Enter button to move to the next field.

OrAL - (Override Alarm)

If enabled, this alarm will turn on during an override pump cycle. It will clear when the override off time is completed. This may be useful to indicate to the end user that they need to reduce their water usage.

Display will alternate showing "OrAL" and the current value.
Press Set/Change button to change this field.

Possible Settings:
0 = Override Warning Alarm Off (Default)
1 = Flash Alarm Light only
2 = Flash Alarm Light and sound audible

HLEd - (High Level Time Delay)

Display will alternate showing "HLEd" and the current value.
The High Level Alarm will delay according to the set time. If the the fluid level is above the High Level set point for this length of time without interruption the alarm will begin to sound.
Time shown is in [Minutes : Seconds] (Default Time- 00:00)
(Maximum time setting is 99:59)

Press Set/Change button to change this field.
Press Menu/Enter button to move to the next field.

Field Wiring Connections

Terminal Strip With All Available Options

Note: This is only a sample, please follow the specific connection instructions located inside your panel.

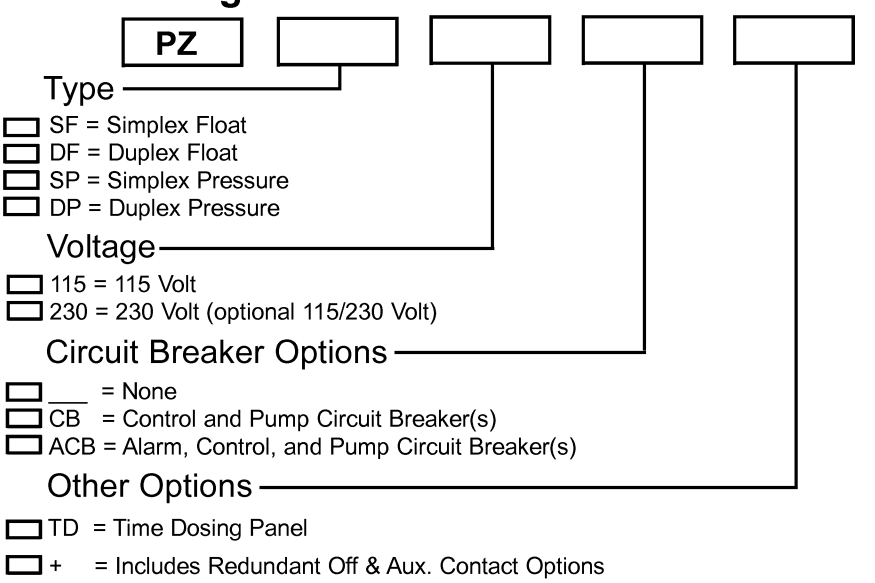
L1	L2	N	G	1	2	3	4	N	G	5	6	N	G	7	8	9	10	11	12	13	14	15	16	17	18

Sample PZDF230ACB+ Terminal Strip

L1, L2 & N	115/230 VAC Pump Power
1	115 VAC alarm power
2	115 VAC control power
3 & 4	Pump 1 Mtr.
N	For 115 Volt Pump Connection
5 & 6	Pump 2 Mtr.
N	For 115 Volt Pump Connection
7 & 8	Redundant Off / Redundant On & High Level
9 & 10	Off
11 & 12	Lead On
13 & 14	Lag On
15 & 16	Alarm
17 & 18	Aux. Alarm Contact

Note: Terminal strips differ between Power Zone models and options. Your panel may may be missing some of these terminal strip numbers. However, this example shows all possible field wiring connections.

Determining Your Power Zone Model Number



Specifications

	Float	Pressure
Available in Simplex & Duplex	Duplex Includes alternator & lag pump delay	
Enclosure Dimensions	10” X 8” X 5”	
Overall Dimensions	12” X 10.5” X 7.5”	
Enclosure	UL Type 4X with Molded Mounting Feet	
Audible Alarm	Includes “Touch to Silence/Test” circuitry	
Float Status	Accessed Thru Display	N/A
Level Settings	N/A	Accessed Thru Display
Flashing Red Alarm Light	Includes Mulitple LED Lights	
Weight	6 lbs	
Measurement Range	N/A	42”
Includes:	Floats Sold Separately	Air Bell & 25ft of tubing
Pressure Input	N/A	Min: 0 psi Max: 1.73 psi Max Overpressure: 10.8 psi
Controller Temp. Range	-40°F (-40°C) - +185°F (+85°C)	
Humidity	95% non-condensing	
Terminal Torque Ratings	Large - 35 inch lbs., Small - 12 inch lbs.	
Voltage to Floats	120 VAC	N/A
Voltage to Pump Relays	12 VDC	
Aux. Alarm Contact Rating	5 amp 120 VAC	
Fuses Max Current when shorted Trip Current	Thermal Fuse Current Limiting 3 A 0.1 A	
cULus 508 Listed		
Maximum 2 HP, 115V (24FLA) - 5 HP, 230V (28FLA)		

For catalog, options, or pricing information go to:

www.csicontrols.com