



WellZone™ Pressure Controller

Single Phase Well Pump Control Panel

Installation and Operation Manual

Parts Included



Specifications

Input Voltage: 115/230 VAC, 60Hz

Pump Ratings: Single phase, 2-wire (4~14FLA)

- 0.5 HP at 115 VAC, 60Hz
- 0.5 HP -1.5 HP at 230 VAC, 60Hz

Operating Temperature:

14°F to 122°F (-10°C to 50°C)

Enclosure: 8 x 6 x 4 inch (20.32 x 15.24 x 10.16 cm)

NEMA 4X thermoplastic

Includes liquid tight cable strain relief fittings:

- 2-1/2" UF cable
- 1-1/2" round cable

Pressure Transducer:

0-150 PSI (included) 1/4" NPT Male,

NSF 61 rated, 4-20mA, with 16.4 ft (5m) cable

Auxiliary Alarm Contacts:

N.O. 1 amp, 120 VAC Max



WARNING!



ELECTRICAL SHOCK HAZARD

Disconnect all power sources before servicing. Failure to do so could result in serious injury or death.

This digital controller does not provide Variable Speed Pump Control or constant pressure operation. This control panel must be installed and serviced by a licensed electrician in accordance with the National Electric Code NFPA-70, state and local electrical codes. UL Type 4X enclosures are for indoor or outdoor use.

Warranty void if panel is modified.



For information regarding operation, available options, or servicing questions, please call CSI Controls Technical Support.

CSI Controls offers a five-year limited warranty. For complete terms and conditions, please visit www.csicontrols.com.

Products returned must be cleaned, sanitized, or decontaminated as necessary prior to shipment to ensure that employees will not be exposed to health hazards in handling said material. All applicable laws and regulations shall apply.

Features

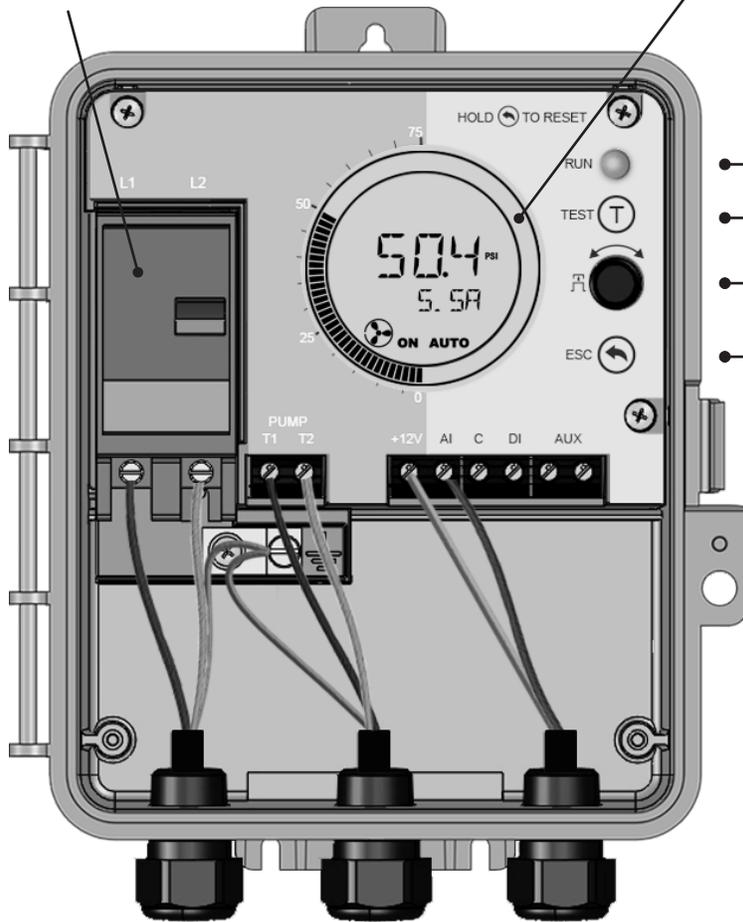
The WellZone™ digital controller provides pressure control for single phase 2-wire submersible well pump applications. It uses a 0-150 PSI pressure transducer to monitor the discharge pressure and turns the pump ON and OFF according to the Start and Stop setpoints. The LCD display is visible through the clear cover of the enclosure to allow for quick view of the system pressure, run status, hours run and pump cycles. The rotary button provides the user with a simple navigation method through the menu and program settings. It features built in pump protection including rapid cycling and dry run. It is preprogrammed to run the pump as the pressure drops below 40 PSI and stop as the pressure rises above 60 PSI. High & Low pressure settings are available with an auxiliary alarm relay.

Circuit Breaker:

The pump circuit has a thermal-magnetic circuit breaker that provides pump disconnect and branch circuit protection.

LCD Display:

LCD display shows pressure reading, pump amp reading, pump on indicator.



Pump Run Light

Pump Test Switch:

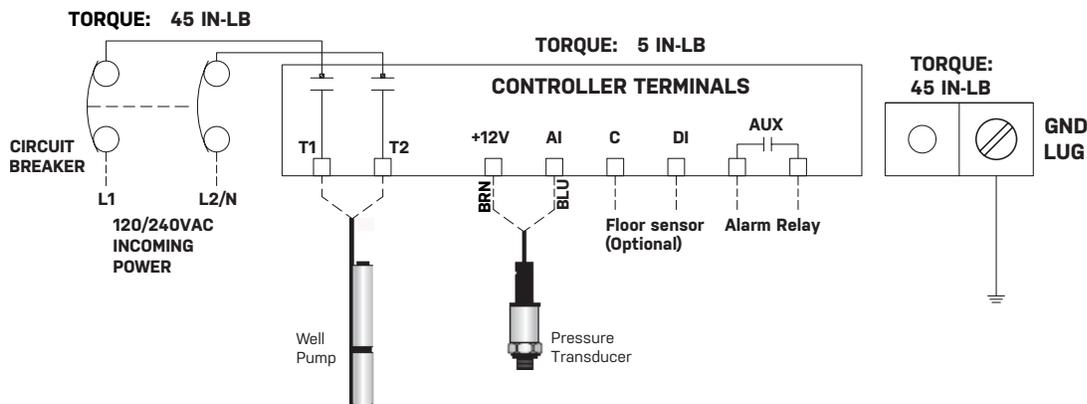
Run pump manually.

Rotary Encoder Push Button:

Rotate to scroll menu settings. Press to select the desired setting.

ESC Button:

Exit without saving or jump to previous display.

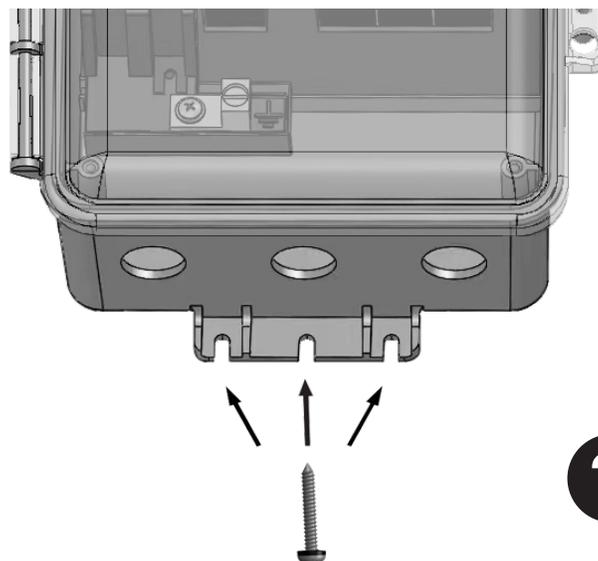


Mounting the Control Panel

1 Drill and fasten top of the enclosure using appropriate anchor.



2 Drill and fasten bottom of the enclosure using appropriate anchors.



**Technical support,
service questions:**

+1-800-746-6287
techsupport@sjeinc.com

Monday - Friday
7:00 AM to 6:00 PM Central Time

Wiring the Control Panel

⚠ CAUTION!

Disconnect all power to the control panel before wiring.

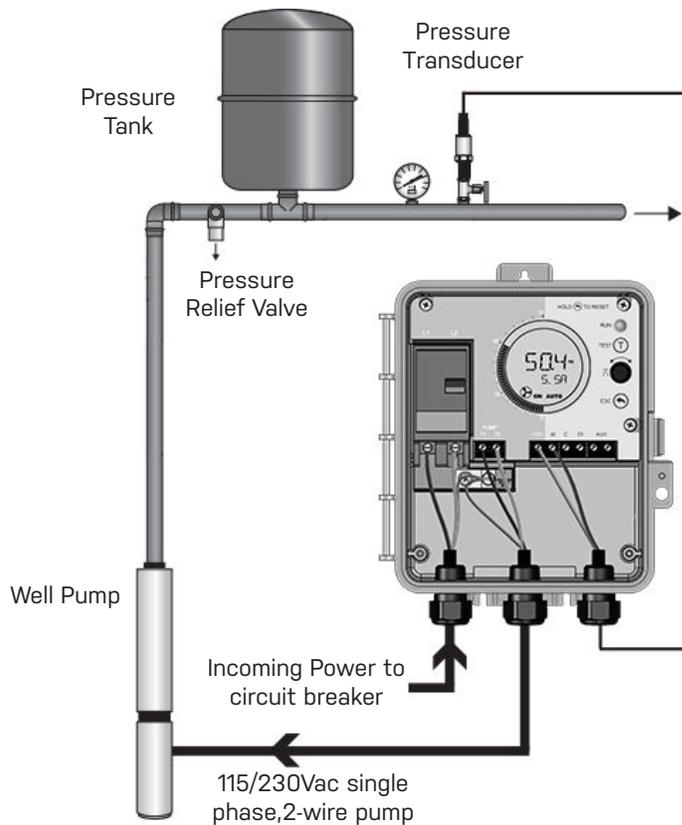
Ensure that the incoming supply power voltage is the same as the rating of the pump motor being installed. Ensure that the rated Amps of the motor does not exceed the rating of the control panel.

1 Connect the following wires to the proper terminal positions:

- Incoming power to the circuit breaker
- Motor/Pump power to Motor
- Pressure transducer

See wiring label on inside the control panel for details.

2 Verify correct operation of control panel after the installation is complete.



3 Maximum motor cable lengths.

Motor			Feet - Motor Cable (75C) ¹	
Vac	HP	Amps ²	14 AWG	12 AWG
115V	1/2HP	12.0A	100	160
230V	1/2HP	6.0A	400	650
	3/4HP	8.0A	300	450
	1.0HP	10.0A	250	400
	1.5HP	13.0A	175	300

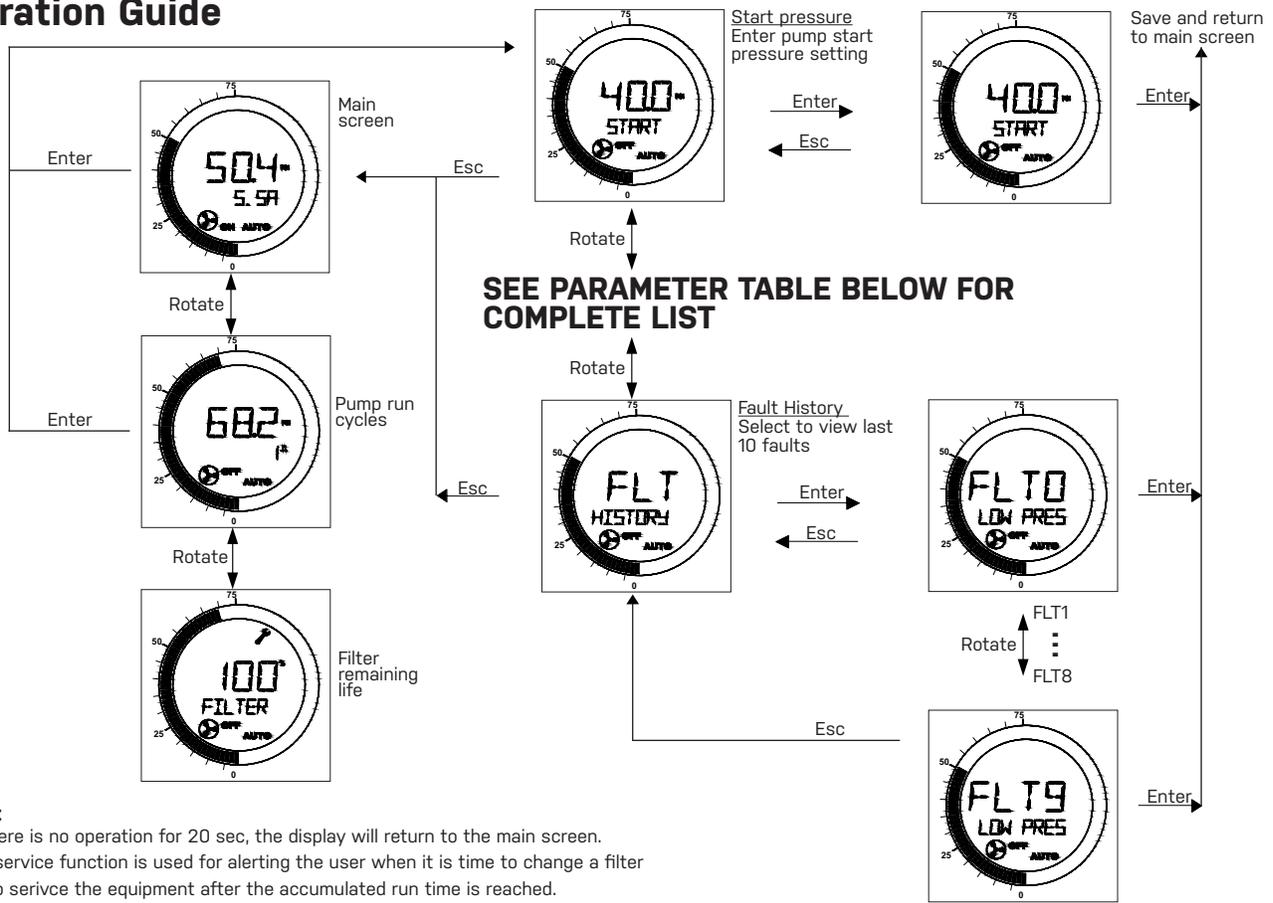
¹ Cable length is measured from the motor to the main panelboard (Service Entrance)

75C Insulation - AWG Copper Wire only. Do not use aluminum conductors.

Use with 2-wire motor only with internal thermal protection.

² Typical S.F.A. (Service Factor Amps). Check motor nameplate for actual data.

Operation Guide



Notes :

- A. If there is no operation for 20 sec, the display will return to the main screen.
- B. The service function is used for alerting the user when it is time to change a filter or to service the equipment after the accumulated run time is reached.

The icon will flash on main screen when the timer is done (Filter at 0%).

Push and hold ESC button 4 seconds to reset the filter or service time.

Parameter	Description	Default	Range Min	Range Max	Unit	Function
START	Start Pressure	40.0	1.0	140.0	PSI	The pump will RUN when the pressure drops below the "START" pressure value and continue to RUN until the pressure rises above the "STOP" value. Set START<STOP. The "STOP" value should be at least 10 PSI over the "START" value.
STOP	Stop Pressure	60.0	10.0	150.0	PSI	The pump will RUN when the pressure drops below the "START" pressure value and continue to RUN until the pressure rises above the "STOP" value.
HIGH	High Pressure	70.0	0.0	150.0	PSI	High Pressure alarm. The pump will stop if the pressure rises above this value.
LOW	Low Pressure	20.0	0.0	150.0	PSI	Low Pressure alarm. If the pressure drops below this value, the "LOW TMR" timer will start. The pump will stop when the timer is done and a "LOW PRESS" alarm will be displayed.
LOW TMR	Low Pressure Timer	30	0	3599s(59m:59s)	Seconds	Low pressure timer. This delay timer needs to be long enough to allow the pump to pressurize the system on start up. It can be used to detect a broken discharge pipe or significant leak. Value is in Seconds (s).
OVERLOAD	Motor Overload	12.0	4.0	14.0	Amps	Set to the motor S.F.A. (Service Factor Amps) value as listed on the motor nameplate. The pump will stop if it is pulling excessive amps and the "OVERLOAD" alarm will be displayed. The controller will reset the fault automatically after a cooling period. The controller will reset this fault 4 times automatically before requiring a manual reset.
DRY RUN	Dry Run Amps	0.0	0.0	14.0	Amps	Pump DRY RUN protection. Set this value lower than the normal pump operating amps. 30% lower than the motor Service Factor Amps is common. Adjust up or down as this function is tested. Example: Motor SFA = 10.0A. Set the Dry Run Amps = 7.0A. Set to "0.0" to disable this function (Default).
DRY TMR	Dry Run Timer	30	0	3599s(59m:59s)	Seconds	Time delay before stopping the pump on "DRY RUN" as the amps are lower than the "DRY RUN" amps value. Timer value is in seconds (s).
RECHARGE	Recharge Timer	20	0	3599m(59h:59m)	Minutes	Automatic reset timer after a "DRY RUN" trip, allowing for enough time for the well to recharge. Timer value is in minutes (m).
STRT / MIN	Starts Per Minute	2	1	10	Cycles	Rapid cycle protection. Enter the maximum allowable pump starts per minute. If the number of starts is exceeded, the display will show "RPD CYCL" and a manual reset is required for the pump to start again.
NO AMPS	No Amps Detect	ON	ON	OFF	NA	No amps detection function informs the user of thermal switch trip internal to the motor. Allow the motor to cool and it will start again automatically. This detection function is disabled when set to "OFF".
FILTER	Filter Life Timer	200	1	9999	Hours	Set the estimated pump run time between filter replacements. The time is set in hours (h) and corresponds to pump running hours. will flash on the screen when this timer is done.

Fault Information

Display	Pump	Reset	Description	Action
	STOPS PUMP	Hold ESC for 4 sec to reset or cycle power	LOW PRESSURE ALARM Pressure below the Low Pressure set point for longer than the Low Pressure Timer.	Check for leaks, broken pipes. Check the pump and motor.
	STOPS PUMP	Auto reset when PSI is back to normal	HIGH PRESSURE ALARM Pressure greater than the High Pressure set point.	Check pump, piping and pressure tank.
	STOPS PUMP	Hold ESC for 4 sec to reset or cycle power	PUMP DRY RUN ALARM Pump DRY RUN protection. Set this value lower than the normal pump operating amps. 30% lower than the motor Service Factor Amps is common. Example: Motor SFA = 10.0A. Set the Dry Run Amps = 7.0A. Set to "0.0" to disable this function (Default).	If the pump is tripping on DRY RUN but there is water in the well, decrease this setting. If the pump is NOT tripping on DRY RUN, then increase this value.
	STOPS PUMP	Hold ESC for 4 sec to reset or cycle power	PUMP RAPID CYCLING ALARM This is the maximum allowable pump starts per minute. If the number of cycles per minute is exceeded, the pump will not start and the RDP CYCL alarm will be displayed.	Check the pressure tank for damage or incorrect pre-charge pressure. These commonly result in the pump rapid cycling. Correct or replace pressure tank. Increase the number starts per minute for systems with small pressure tanks. Contact the pump/motor manufacturer for the max allowable starts/minutes.
	STOPS PUMP	Auto reset / Manual reset	MOTOR OVERLOAD TRIP Class10 overload protection, calculated based on the motor S.F.A. load. The overload will automatically reset after a cooling period. It must be manually reset after four consecutive times trips.	Check the pump for clogging or locked rotor condition.
	STOPS PUMP	Auto reset	WATER DETECTION SWITCH ALARM Digital input from the optional floor sensor or float switch. If the input of water sensor is ON for more than 5 sec, shut down the pump and display "WATER SW". This alarm will auto reset when the switch opens.	Check the water sensor or float switch. Correct the cause of water leakage or water supply prior to resetting the fault.
	STOPS PUMP	Auto reset	PRESSURE TRANSDUCER OPEN CONNECTION Active when the 4-20mA signal input value is < 3.0mA	Check the transducer cable connection to the pressure sensor. Make sure it is connected properly and hand tightened. Check the transducer cable for damage. Replace cable if damaged. Check the transducer cable connections to the controller. Make sure there is a good connection.
	STOPS PUMP	Auto reset	PRESSURE TRANSDUCER SHORT CIRCUIT Active when the 4-20mA signal input value is > 21mA	Same as above. In addition, check the pressure transducer. Remove it and inspect for damage. Replace if it is damaged.
	WAITING FOR AUTO RESET	Hold ESC for 4 sec if you want to cancel the timer and re-start the pump immediately	WELL IS RECHARGING - PLEASE STAND BY This is the waiting time after the pump as tripped on "Dry Run" fault, before performing an automatic reset.	Wait for the recharge timer to complete. Increase or decrease this timer value as needed to match the recovery time of your well.
	NO CHANGE	Hold ESC for 4 sec if you want to cancel the timer and re-start the pump immediately	NO AMPS DETECTED No amps are detected which implies that the thermal switch internal to the motor has tripped or that the pump is not connected. When the "NO AMPS" function is enabled, it will ignore the Low Pressure and Dry Run conditions and maintained the RUN command to the pump until the motor has cooled down and restarts automatically.	If it is a motor thermal trip, then allow the motor to cool and it will start again automatically. Investigate the cause of the motor internal trip. If the motor is not connected, check the motor wiring. The NO AMPS function can be disabled when set to "OFF".

Auto Reset - resets when the fault clears

Manual Reset - press and hold ESC button over 4 seconds in main screen.