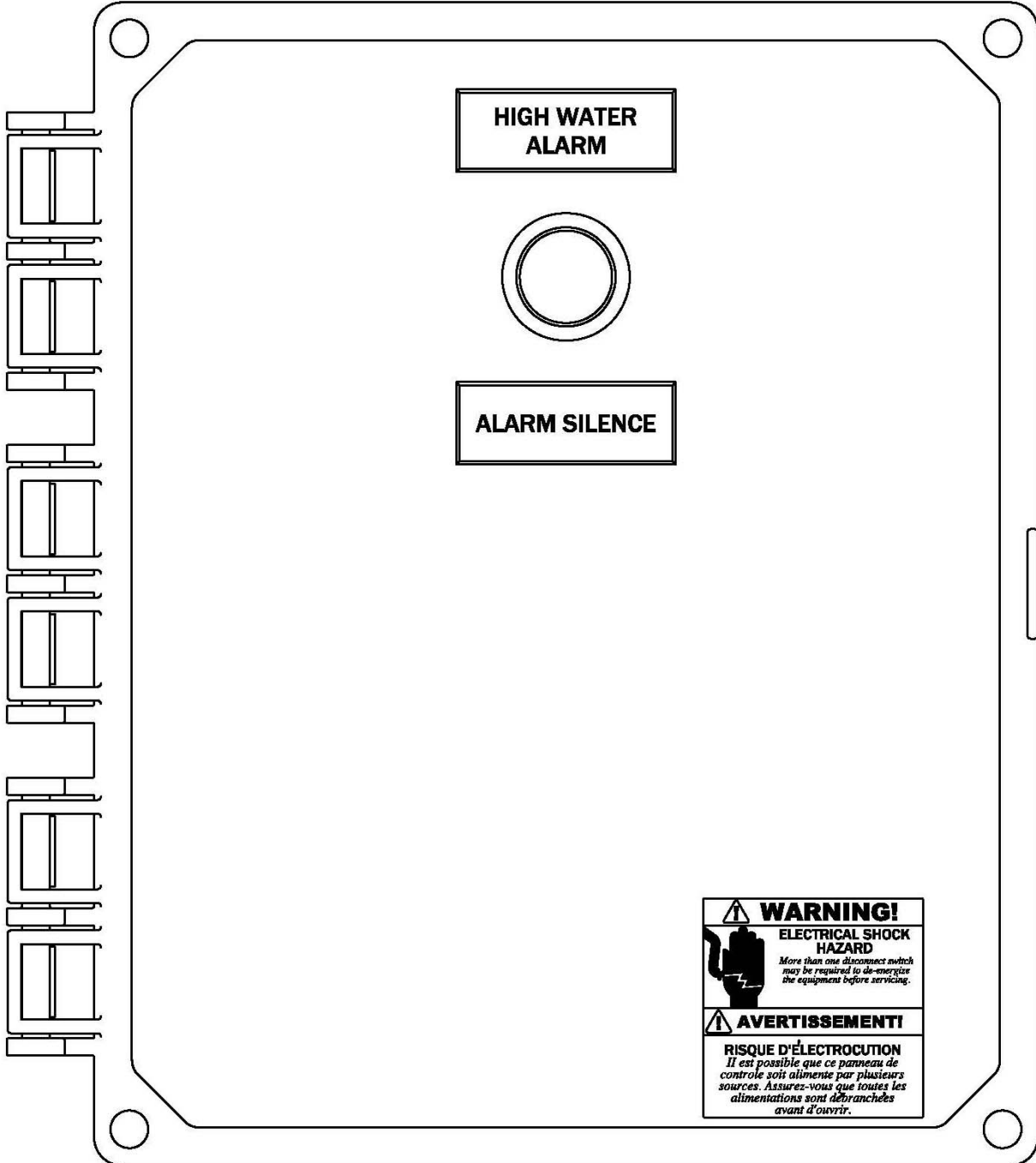


Instructions for 50A808 Control Panel



Warning! Electrical Shock Hazard – Be sure to disconnect all power sources before installing or servicing any control panel or pump system. Failure to do so could result in severe personal injury or death! This or any other control panel must be installed by a certified electrician and be wired in accordance to all National Electric Code requirements as well as all state or local code requirements.

This control panel is designed and wired to operate on a particular power supply voltage as well as a specific horsepower and current. Do not attempt to operate this or any other control panel with different power supply voltages or current ratings exceeding the specified value on the nameplate or wiring schematic. Failure to do so will void warranty and damage components within the control panel or the pump being used with this control.

When installing any control panel or pump, it is advisable to put them on their own circuit with a properly sized disconnect or circuit breaker. The disconnect should be sized in accordance to local or state codes as well as the National Electric Code. All wiring between the main power source and the control panel should be sufficiently sized to not only handle the operating current of the pump(s) being operated but to prevent any significant voltage drop due to extended distances from the power source. Failure to size wiring properly can prevent the panel and the pump from operating properly and can even result in damage. It is best for the supply voltage to be within 5% of the nominal nameplate voltage rating. Exceeding 5% voltage drop or variance increases the potential for damage to control panel as well as the pump.

This instruction manual should be used in conjunction with the pump instructions and should be kept in a safe and easy to find location, so that it can be referred to often by the installer as well as the person(s) in charge of maintaining the system.

Caution – Do not proceed with the installation of the control panel until this entire instruction manual has been read and is understood. Always take appropriate precautions and be sure that all power sources have been disconnected before beginning to service or install any control panel or pump.

Locating and Mounting the Control Panel

This control panel is constructed to a NEMA 4x standard and can be installed in either an indoor or outdoor location. However, this control should be mounted in a location which will limit the potential for the panel to become submerged in water or other mediums, since this panel is not rated for submersible locations. The panel enclosure is provided with either mounting feet or integral mounting bar. The following items should be considered when determining where to mount this or any control panel:

- 1) The Visibility of the Visual Alarm Light.
- 2) The Distance from the Power Source.
- 3) The Distance from the Collection Tank.
- 4) Accessibility for Maintenance
- 5) Damage Prevention

The panel enclosure should be mounted to a secure and stable base or wall. Also, the enclosure should be mounted in a vertical position and be high enough from the ground to allow for easy access for maintenance personnel. Once the appropriate position is determined, the mounting holes provided in the mounting feet or mounting bar can be used to secure the enclosure to the wall or mounting base.

Important! – The enclosure used with this control panel has locking latches. It is advisable to use a pad lock to prevent any unauthorized access to the inside of the control panel.

Connecting Incoming Power Supply

Warning! Electrical Shock Hazard – Be sure to disconnect all power sources before installing or servicing any control panel or pump system. Failure to do so could result in severe personal injury or death!

All entries created in the control panel must be appropriately sealed per the National Electric Code (NEC Code NFPA#70), and all fittings, conduit, cord seals, etc. should be the same rating as the

control panel (NEMA 4X). Failure to use appropriately rated fittings, conduit, and cord seals will void all warranties as well as result in damage to the components inside the control panel.

Once the appropriate fittings are determined, a hole must be created in the panel enclosure to secure and seal the entry fitting to the control panel. Once this is done the cord from the incoming power source will be feed through this fitting and conduit. After the incoming power cord has been feed into the control panel, it will connect to the terminal block provided in the control panel. 115V – 1phase power is being provided the terminal block will be marked L1 & N1 or X1 & N. The control panel is provided with grounding lugs, which must be properly grounded per NEC code.

Connecting the Pump and Float Cords

Note: if using a single entry and conduit for the incoming power, pump cords, and float cords, be sure the fitting and conduit are large enough to allow for all of these cords.

If using separate entries for all of the pump and float cords, please be sure all fittings and conduit and properly rated per NEC Code. Then a separate hole must be cut into the panel enclosure for each cord entry fitting. Once the appropriate fittings are determined, a hole must be created in the panel enclosure to secure and seal the entry fitting to the control panel. Once this is done the pump power cord will be fed through the appropriate fitting and conduit and into the control panel. The pump power cord will be connected to the terminal block provided inside the control panel. The terminal block will be marked as follows: T1, N. It is good practice to label or mark the leads on the pump power cord T1, N as well. The control panel is provided with grounding lugs, which must be properly grounded per NEC code

Float or Level Control Connections

Before connecting any of the float or level controls, it is a good practice to mark the float cords. For example:

“OFF” Float = Label “OFF”

“TIMER” Float = Label “TIMER”

High Level Alarm Float = Label “HWA”

This will help prevent any confusion after feeding these cords thru any conduit entering the control panel. If the floats are not connected in the appropriate sequence the panel will not function properly. A terminal block is provided inside the panel for connecting the appropriate number of floats into the panel. Normally, three floats are required for a simplex, four floats for a duplex. The provided wiring schematic and connection diagrams are located inside the door of the panel enclosure as well as a loose copy inside the control panel. Normally the float terminal blocks are marked as follows:

Simplex Control

- 1 & 5 = “Redundant OFF/Low Level” Float
- 2 & 5 = “Standard Timer” Float
- 3 & 5 = “Override Timer” Float
- 4 & 5 = “High Water Alarm” Float

(Always check provided panel schematic)

Important! – Always located the floats or level controls in accordance with the pump manufacturer’s recommendation as well as the system requirements. Always check the float or level control before installing. This can be done using an ohm meter. To check the float simply connect one of the meter leads to the black wire on the float and the other to the white lead on the float. When the float is in the “OFF” position, meter should read infinity. When float is in the “ON” position the meter should read zero.

Initial Panel Start Up

Once all of the connections have been made to the control panel, it is time to verify the panel is working properly. Before turning on the main circuit breaker or disconnect, the voltage should be checked on the line side. **Warning! – Live voltage can kill! Use caution when checking the power supply voltage.** This can be done with a volt meter or multi-meter. To check the supply voltage, place one of the meter leads to the first leg of the incoming power and the other to the second

leg. Unequal voltage can severely damage the pump and the control panel. After confirming the incoming power supply, verify that the power supply matches the voltage of the control panel and the pump. Before turning on the main circuit breaker or disconnect, be sure all of the circuit breakers in the control panel are in the “OFF” position.

Panel Initialization

First turn on the main circuit breaker or disconnect switch. Once again check the voltage, this time check the voltage at the CB1 circuit breaker in the panel. Use the same procedure describes in the previous section. If voltage is still good, then turn “ON” all circuit breakers in the control panel.

The pump should be started to make sure it is working and running operating properly. Note – It is important to check the rotation of the impeller. Consult the instructions provided with the pump to confirm the proper rotation. The control panel is supplied with an HAND-OFF-AUTO switch. The pump can be run manually by pushing the switch into the HAND position. The pump should turn “ON”. This should allow the rotation of the impeller to be checked. **Warning! – Do not place fingers, hands or wear loose clothing that can get caught in the impeller.** If the impeller is not rotating the proper direction, consult the pump manufacturer. **Warning! – Live voltage can kill! Be sure all power sources are disconnected before attempting to disconnect the pump motor leads from the terminal block.**

Verifying the Float Switch Connections

To check the float switch connections on a simplex panel, place the H-O-A switch in the Auto position. First, make sure all of the floats are in the down position. If the “Redundant OFF” float is in the down position, the audible alarm should sound and the red alarm light should flash slowly. Once this float is raised the alarm light and audible should turn “OFF”. If you do not wish to have a “Redundant OFF” switch, simply place a jumper wire between the “1” terminal block position & “5”

terminal block position. Then, raise the “Standard Timer Enable” float switch the pump should remain “OFF” until the customer set “OFF” time has elapsed (see instructions for setting timer parameters). After, the customer set “OFF” time has passed, the pump will turn “ON” for the set “ON” time or until the “Standard Timer Enable” switch is lowered.

If the “Override Timer Enable” float switch is raised the pump will remain “OFF” for the customer determined “OFF” time. Once the “OFF” time has elapsed the pump will start and run for the preset time (see instructions for setting timer parameters). Also, once the override timer is engaged the pump will cycle for a minimum number of cycles on the override timer setting before returning to the standard timer.

If the “High Water Float” is raised the audible alarm will turn “ON” and the Alarm Light will come on. The audible alarm can be silenced by pressing the “SILENCE” button located on the front of the panel door. The audible alarm will automatically reset once the high water alarm condition has been removed or if a predetermined time has passed (see instructions for setting timer parameters).

Additional (Optional) Features

Pump Cycle Counter – This feature is included in the programmable relay and can be viewed on the small LCD screen.

Pump Elapsed Hours – This feature is included in The programmable relay and can be viewed on the small LCD screen.

Troubleshooting Panel

Pump Does Not Run In “Hand” Position

- 1) Check for tripped Circuit Breakers
- 2) Motor Overloads may be “OPEN” wait for a few minutes and try again.
- 3) Verify incoming power voltage is Correct and matches the pump nameplate.
- 4) If the pump requires start components

(I.e. start or run capacitors, and start relays), verify they are working properly and size appropriately for the specific pump being used.

In “Auto” Position

- 1) Check Liquid level in basin
- 2) Check Float Switches in Tank
 - a) Do they Float Freely?
 - b) Functioning Properly
- 3) Check for tripped Circuit Breakers
- 4) Motor Overload may have tripped?
- 5) Verify incoming power voltage is correct and matches the pump nameplate.
- 6) If the pump requires start components (I.e. start or run capacitors, and start relays), verify they are working properly and size appropriately for the specific pump being used.

Pump Does Not Shut-Off

- 1) Make sure H-O-A switch not in the “HAND” position
- 2) Check for Failed Float Switches
- 3) Make sure float switches are able to move freely and not hung up inside the tank.
- 4) Check for Failed Motor Contactor
- 5) Pump may be air locked refer to the instructions included with pump.

Chattering or Buzzing Motor Contactors

- 1) Check float switches – failing float switches can cause contactors to chatter.
- 2) Make sure float switches are located away from any turbulence inside the tank or to close the tank inlet.

Nuisance Tripping of Motor Overload , Circuit Breakers

- 1) Check Incoming Power
- 2) Check the Current Draw of the Pump
Pump may be clogged or motor may be failing.

Alarm Light Does Not Turn-On

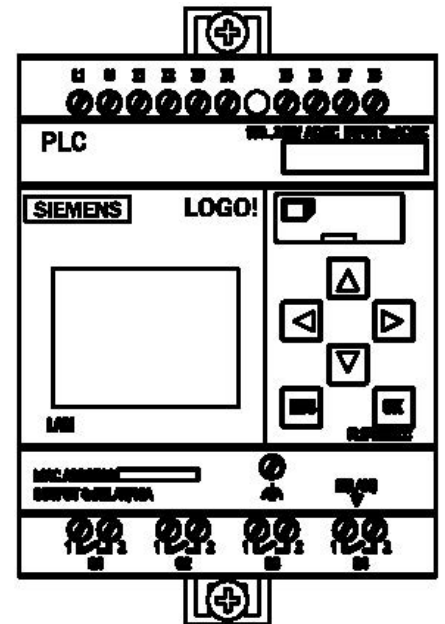
- 1) Check Float Switch
- 2) Check Alarm Light bulb

For additional troubleshooting help, please consult the factory: (419) 282-5933 or the pump manufacturer.

Instructions for 50A808 Panel

Viewing/Modifying Timer Settings

- 1) To access settings, navigate to the date screen using the directional keys. Press “ESC” once there. Once this is done a series of options should appear on the LCD screen.
- 2) Once the options screen appears, press the down arrow to select “Program” and press “Ok.” Now select “Set Parameter” and press “Ok.”
- 3) This menu will show all available configurations. Set your timers as required by your local regulations, drainage capacity, and pump capacity. See the list below for a description of these parameters.



Parameters:

NOTE: When setting dose timers, 05:30s means 5 seconds and 30/100 seconds. Possible options:

- <0-99 hours> : <0-59 minutes> h
- <0-99 minutes> : <0-59 seconds> m
- <0-99 seconds> : <0-99 1/100th seconds> s

STD Time: Dose timer during normal water levels. Timing starts in the “off” state. “On” time will continue counting to completion even after the standard timer enabled float drops. However, it may be immediately interrupted if the redundant off float drops. Install a jumper wire on terminal block positions 1 and 5 if a low level/redundant off feature is not desired.

OffT: When the float rises, no action will be taken until the “OffT” time expires.

OffE: Read-only display that shows the elapsed “off” time.

OnT: Operate the dose pump for a set amount of time. Timer latches until the dose completes.

OnE: Read-only display that shows the elapsed “on” time.

Default setting: OffT=60:00m, OnT=00:40m

OVR Time: Dose timer during peak water levels. Timing starts in the “off” state. “On” time will continue counting to completion even after the override timer enabled float drops. However, it may be immediately interrupted if the redundant off float drops. Install a jumper wire on terminal block positions 1 and 5 if a low level/redundant off feature is not desired. The override float takes precedent over the standard timer enable float if triggered. This ensures a backup function in the event of a standard timer enable float failure.

OffT: When the float rises, no action will be taken until the “OffT” time expires.

OffE: Read-only display that shows the elapsed “off” time.

OnT: Operate the dose pump for a set amount of time. Timer latches until the dose completes.

OnE: Read-only display that shows the elapsed “on” time.

Default setting: OffT=30:00m, OnT=00:40m

RESET: When silenced, if the alarm condition remains active for this duration, the silence function will be reset.

T: Set the delay before the silence feature is reset.

Ta: Read-only display that shows the elapsed time.

Default setting: T=12:00h

HWA-DLY: The high-water alarm float must remain up for this duration before an alarm event is generated.

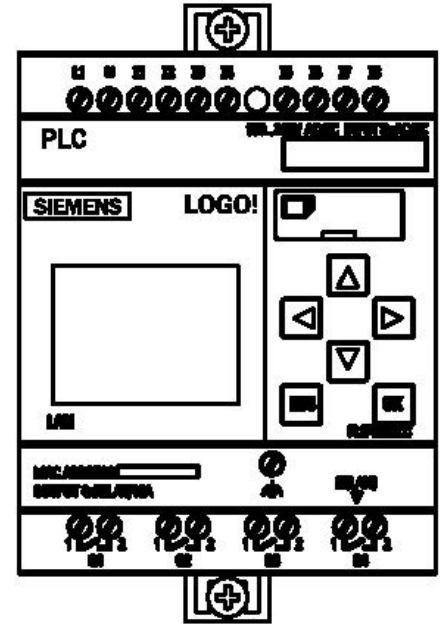
T: Set the delay before triggering a high-water alarm.

Ta: Read-only display that shows the elapsed time.

Default setting: T=00:05m

Changing Timer Settings:

- 1) To change a timer setting; first scroll thru the settings list using the up and down arrow keys. Once you have selected the parameter you wish to modify, press “ok.”
- 2) Use the up or down arrow to select a particular sub-configuration per this parameter (for example, OnT). Alternatively, once you have started editing an item, you may use the right arrow key to scroll digits until the cursor shifts to the next line. Press “Ok” to enter write mode.
- 3) While in write mode, the cursor will flash over the digit that you are currently editing. Use left or right to shift digits and up or down to change the value.
- 4) Press “ESC” to cancel changes or “OK” to save the values you have set.



Resetting elapsed time meters and cycle counters:

- 1) Navigate back to the date screen. If you have just finished setting parameters, repeatedly press “ESC” to exit the menu tree. You may have to use the directional keys to toggle through status messages.
- 2) Once you are at the date screen, press the left arrow to view the function keys.
- 3) Press and hold “ESC” while pressing a direction key. If timed correctly, one of the icons on screen will flash. This icon corresponds with the function you just triggered. Data will reset as follows:

ESC+UP: Reset Pump data

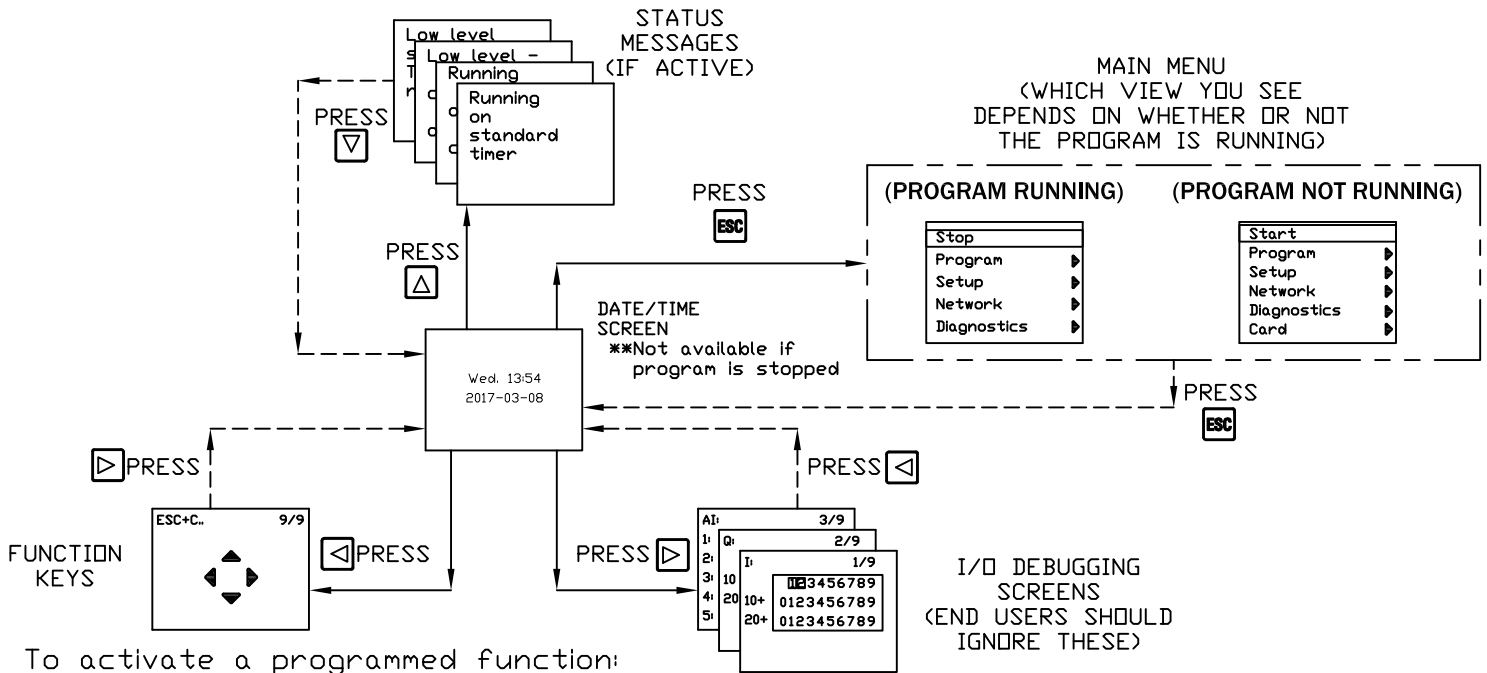
ESC+LEFT: Reset high water alarm data

ESC+RIGHT: Reset low water alarm data

Navigating PLC menus:

Refer to the menu flowchart for assistance in navigating to the “main menu”. From there, you can access functions that allow you to change the date and time or other PLC settings.

If a message screen is active, first use the up or down keys to find the “date/time” screen. Now you can press “ESC” to display the main menu. From here, press the down arrow key to select “program” then “set parameter”



To activate a programmed function:

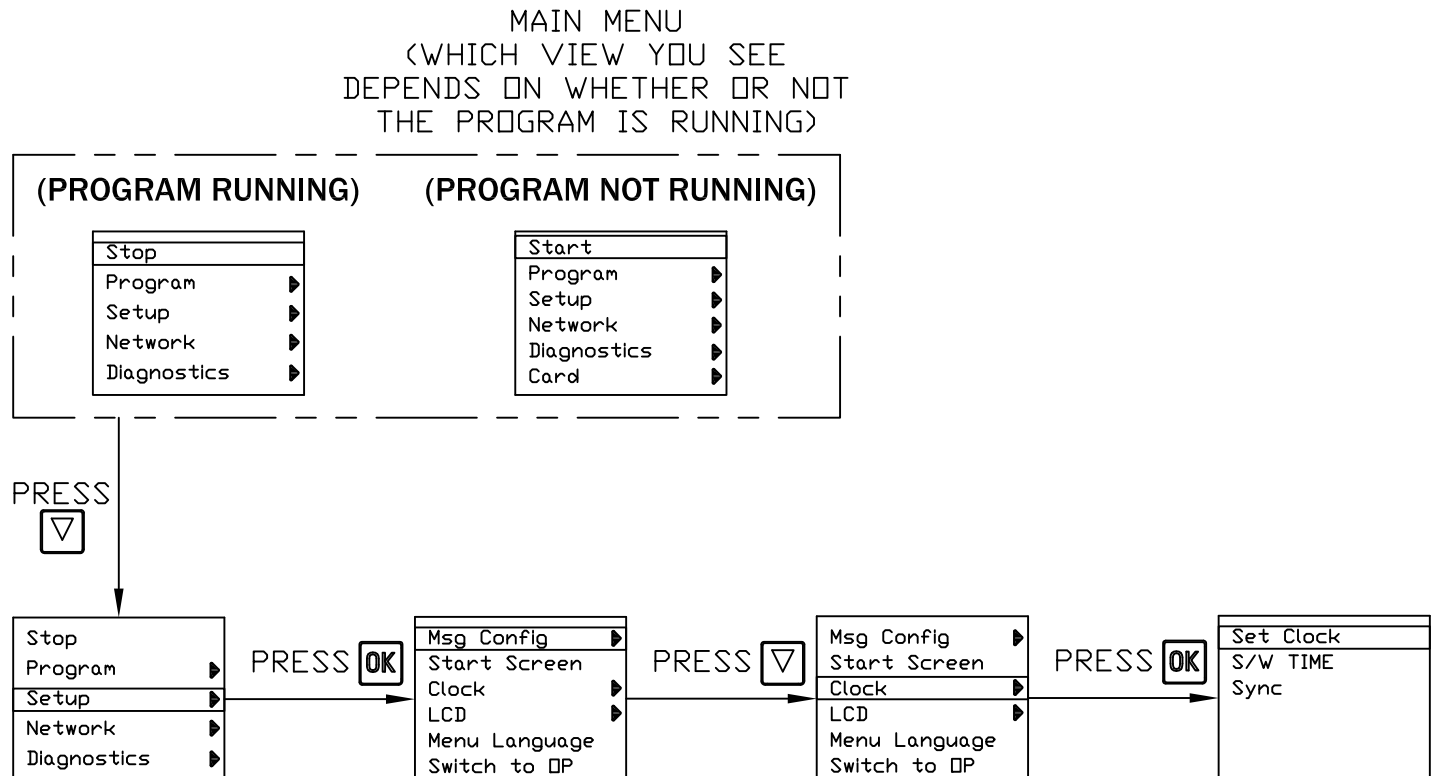
Press and hold **ESC**

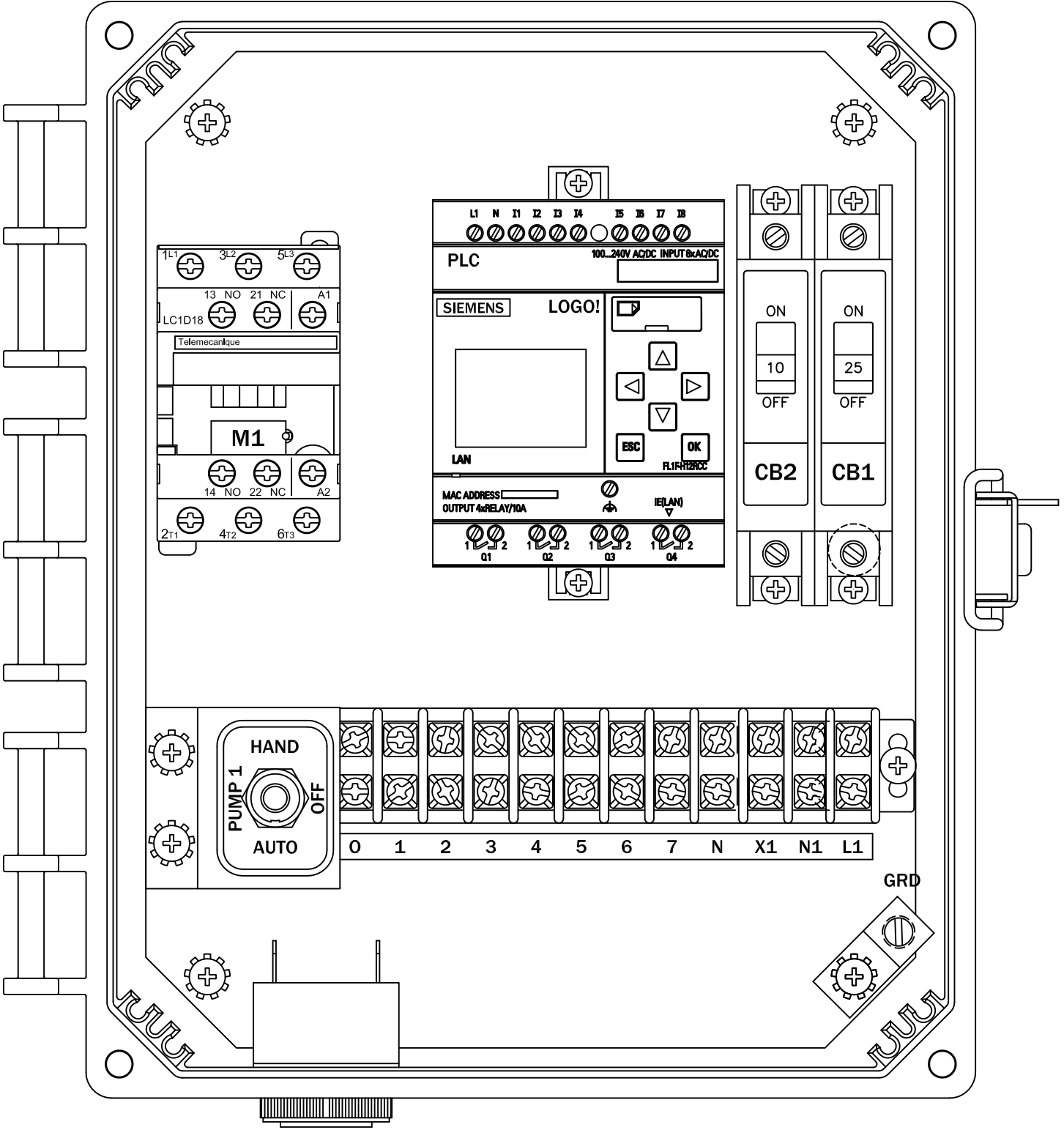
While holding **ESC**, press **▽**, **◀**, **△**, or **▶**

When activated, the corresponding icon will flash

Setting the clock:

Typically, the panel will operate just fine without setting the clock. However, some panels feature specific timers that *do* operate based on the date and current time. When setting the clock, note that 00:00 = 12PM, 13:00 = 1PM. Continue pressing the right arrow key to set the date. Press **OK** when finished or **ESC** to cancel.





1L1 3L2 5L3
13 NO 21 NC A1
LC1D18
Telemecanique
M1
14 NO 22 NC A2
2T1 4T2 6T3

U1 N1 I1 Z1 B1 4 5 6 7 8
100-240V ACDC INPUT & ACDC
PLC
SIEMENS LOGO!
LAN
MAC ADDRESS
OUTPUT & RELAY/IOA
Q1 Q2 Q3 Q4
IE(LAN)

ON 10 OFF
ON 25 OFF
CB2 CB1

HAND
PUMP 1
OFF
AUTO

0 1 2 3 4 5 6 7 N X1 N1 L1

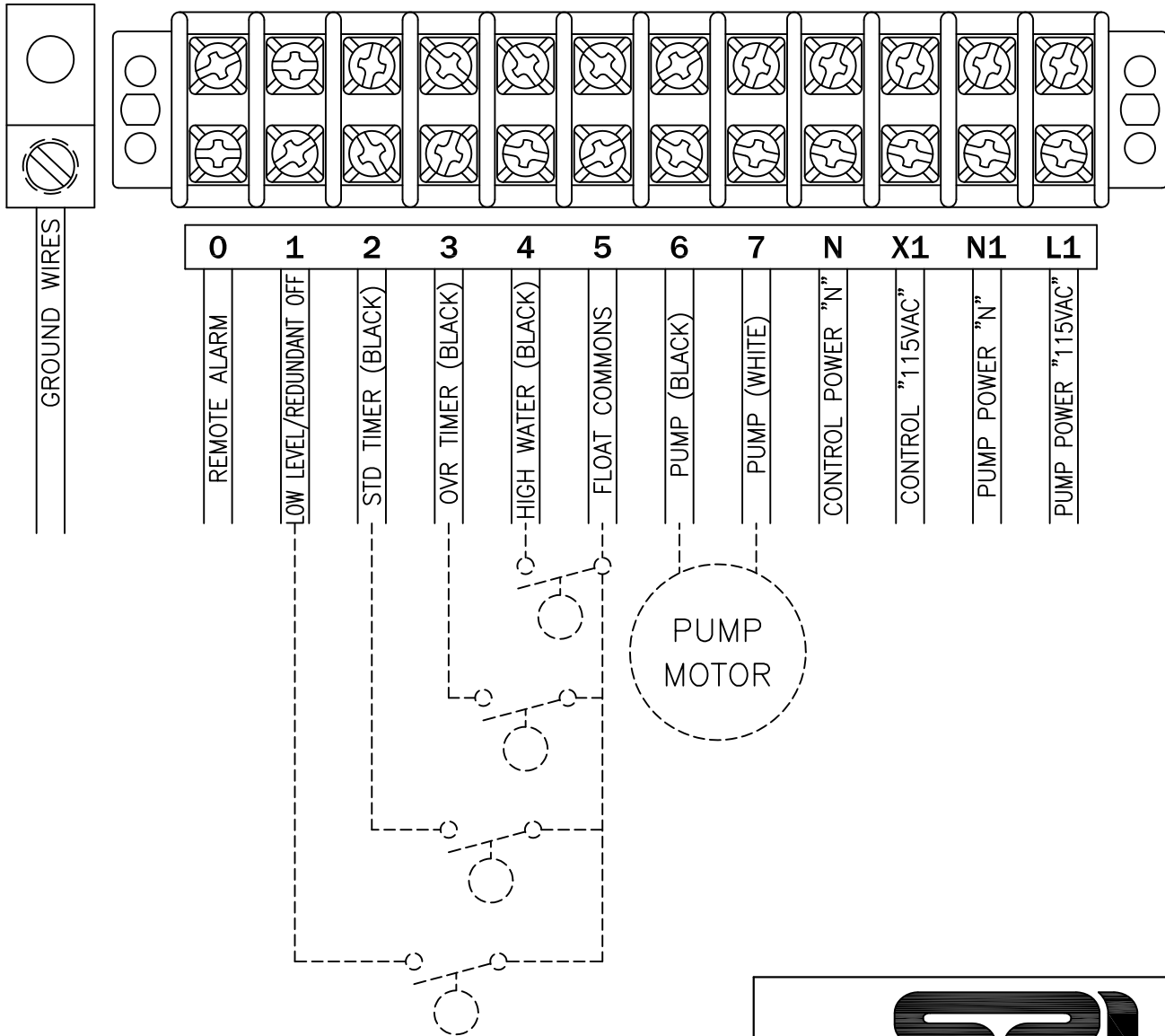
GRD

MODEL NO.

MVP1

TIGHTENING TORQUE FOR TERMINAL BLOCK IS 9 in-lbs.
 TIGHTENING TORQUE FOR CIRCUIT BREAKER ARE AS FOLLOWS:
 14 - 10 AWG = 20 IN-LBS
 8 AWG = 25 IN-LBS
 6 - 4 AWG = 27 IN-LBS

CONNECTION DIAGRAM



ALL INFORMATION CONTAINED IN THIS DRAWING IS
 CONFIDENTIAL AND PROPRIETARY TO SEPTIC PRODUCTS INC.



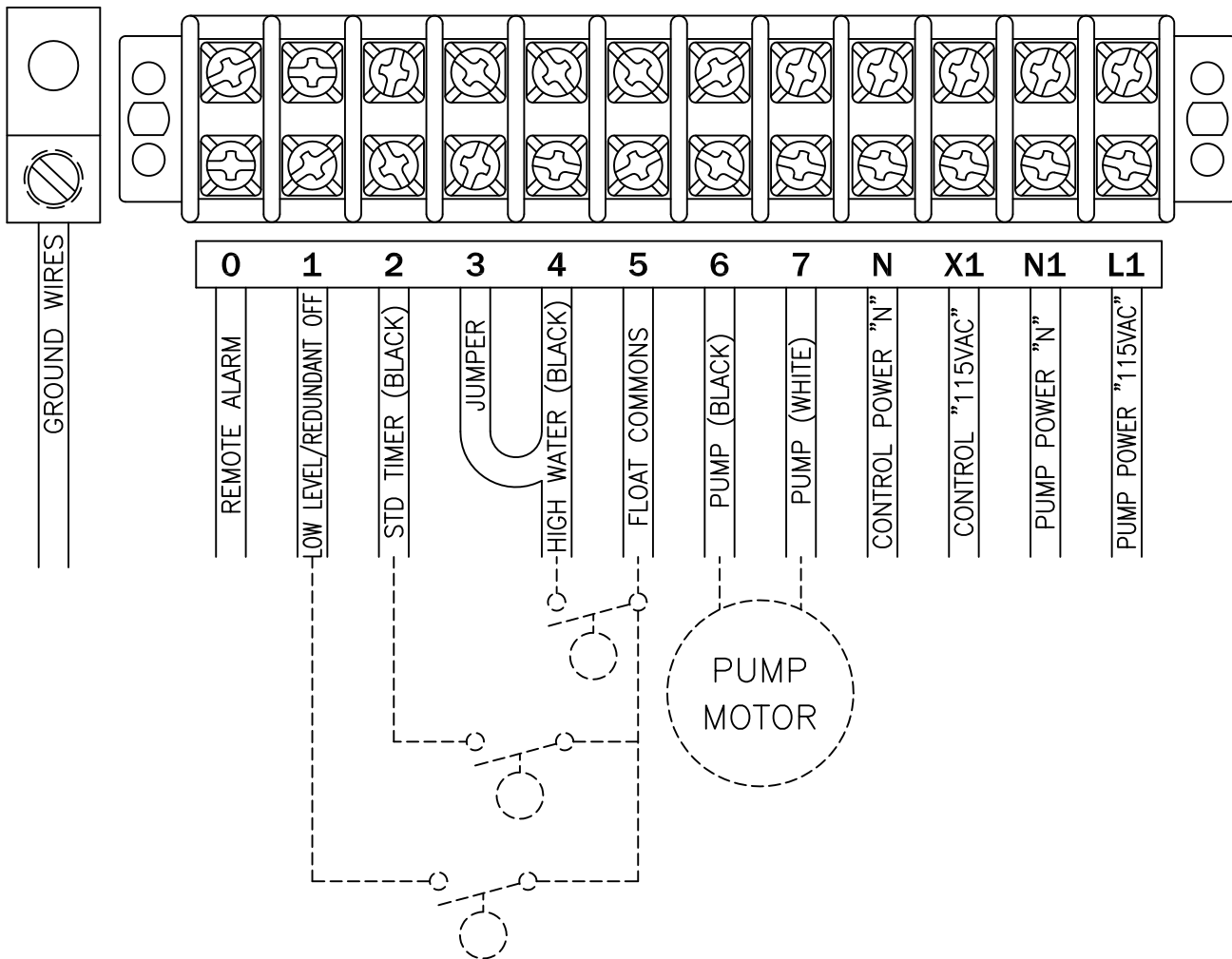
CHANGES		TOLERANCES		DRAWN BY		DATE		POWER CONNECTION DIAGRAM (STANDARD)			
F		DECIMALS .XXX = ±.005 .XX = ±.010		D. MIDDLETON		5/20/04					
E		FRACTIONAL x/x = ±.1/64		MATERIAL SPECIFICATION: AS NOTED				SCALE: PART NO.			
D		ANGLES x° = ±1/2°						FULL		50A808	
C											
B											
A											

MODEL NO.

MVP1

TIGHTENING TORQUE FOR TERMINAL BLOCK IS 9 in-lbs.
 TIGHTENING TORQUE FOR CIRCUIT BREAKER ARE AS FOLLOWS:
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CONNECTION DIAGRAM



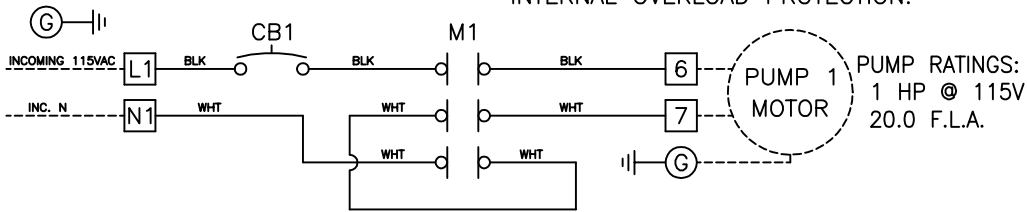
ALL INFORMATION CONTAINED IN THIS DRAWING IS
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CHANGES	TOLERANCES	DRAWN BY	DATE	POWER CONNECTION DIAGRAM (3 FLOAT)	
F	DECIMALS .XXX = ±.005 .XX = ±.010	D. MIDDLETON	5/20/04		
E	FRACTIONAL x/x = ±.1/64	MATERIAL SPECIFICATION: AS NOTED		FULL	50A808
D	ANGLES x° = ±1/2°				
C					
B					
A					

PUMP POWER CIRCUIT
115V - 1PH

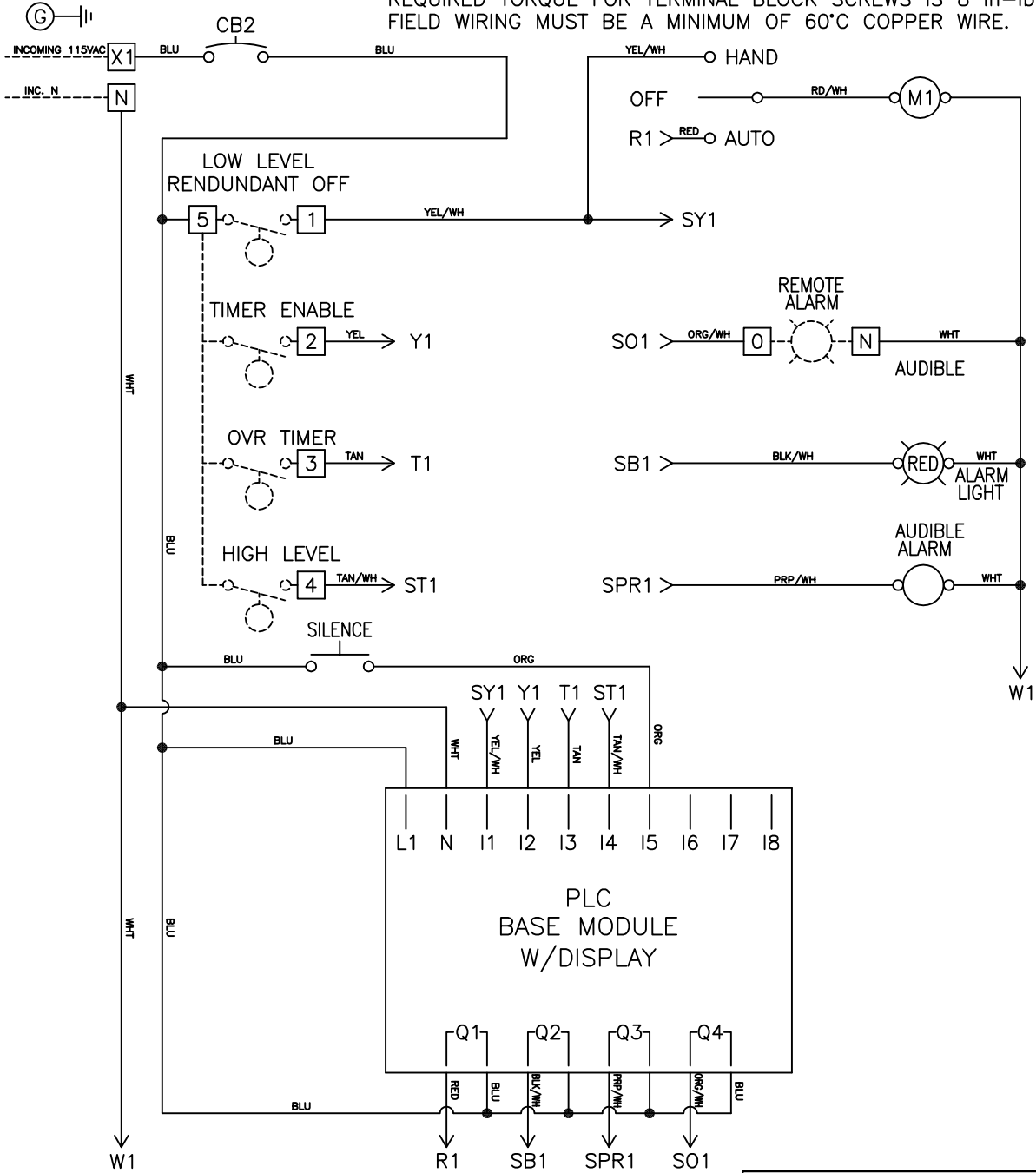
NOTE: PUMP MOTORS MUST HAVE INTERNAL OVERLOAD PROTECTION.



PUMP RATINGS:
1 HP @ 115V
20.0 F.L.A.

CONTROL POWER CIRCUIT
115V - 1PH

NOTES: MAIN PANEL DISCONNECT MUST BE PROVIDED BY INSTALLER.
DASHED LINES INDICATE ITEMS NOT CONTAINED IN THE PANEL.
REQUIRED TORQUE FOR TERMINAL BLOCK SCREWS IS 8 in-lbs.
FIELD WIRING MUST BE A MINIMUM OF 60°C COPPER WIRE.



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CHANGES	TOLERANCES	DRAWN BY	DATE
F	DECIMALS .xxx = ±.005	D. MIDDLETON	08/20/06
E	.xx = ±.010	MATERIAL SPECIFICATION: AS NOTED	
D	FRACTIONAL		
C	x/x = ±.1/64		
B	ANGLES		
A	x' = ±1/2'		

SCHEMATIC, ELECTRICAL	
SCALE: FULL	PART NO. 50A808