

Constant Speed Booster

Installation and operating instructions

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1.0 INTRODUCTION

The constant speed booster HMI is divided in three set of displays: Operation, Setup, and Alarm management. The Operation displays are used by the operators to view and control the booster pumps. The Setup screens are used to set, view, save, and restore the system specific settings (i.e. number of pumps, sensor range, etc.). The Alarm management screens are used to display the current alarms.

The sequence of operation is attached

The list of displays in each set is as follow:

OPERATION DISPLAYS:

- Main menu
- System overview
- Pressure overview
- Digital input overview
- Aquastat overview
- Pump overview
- Pump 1 to 5 control
- Pump 1 to 5 status displays
- PLC diagnostic screen

ALARM MANAGEMENT DISPLAYS:

- Alarm screens
- Tank 1 low level shutdown alarm
- Tank 2 low level shutdown alarm
- Discharge pressure sensor failure alarm
- Suction pressure sensor failure alarm
- Low suction pressure shutdown alarm
- High suction pressure shutdown alarm
- Low discharge pressure shutdown alarm
- High discharge pressure shutdown alarm
- Factory high discharge shutdown alarm
- Pump 1 to 5 run feedback alarm
- Aquastat shutdown alarm
- No more alarm

SETUP DISPLAYS:

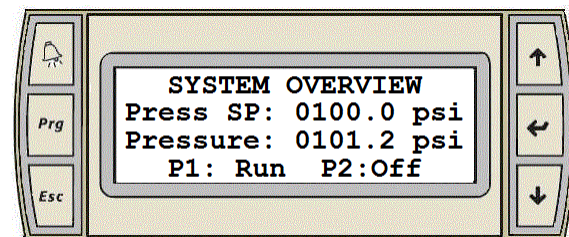
The Setup displays are divided in three levels with each level having the same number of displays with different level of access. Level 0 setup displays are for viewing only and no

adjustment can be made. Level 1 setup displays can be used for changing the system setup and restoring the system factory defaults. Level 2 setup displays can be used for changing the system setup, and saving and restoring the system factory defaults. To access Level 1 and 2 an operator need to enter the proper password: Level 1 password is 9393, Level 2 password is for factory setup.

The list of setup displays for every level is as follow:

- Main setup screen
- System setup 1, 2 and 3
- Discharge pressure setup
- Suction pressure setup
- System pressure set point setup
- Suction pressure alarm set points
- Discharge pressure alarm set points
- Staging pressure set points
- Staging delay set points
- Staging lag pump minimum run time set point
- No flow shutdown setup 1 and 2
- Lead pump switch time set point


HMI PANEL - DESCRIPTION OF BUTTONS FUNCTION






The display panel has six buttons:



- **The alarm button**
 - The alarm button will stay solid White when there are no active alarms.
 - The alarm button will flash **red** when there are unacknowledged alarms.
 - Pressing the alarm button will call up the alarm display.
 - The alarm button will go solid White when all alarms are reset (acknowledged).
 - The alarm button will go solid **red** when all alarms are reset but there are still some active alarms.

- The Prg button** 
 - Pressing the Prg button at any time will call up the main menu display.

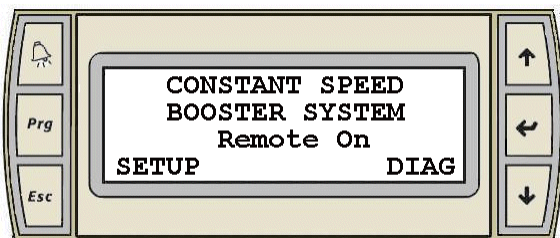
- The Esc button** 
 - Pressing the Esc button will bring you back to the previous display level.
 - For example pressing the Esc button from the pump status display will call up the pump overview display.

- The up and down arrow buttons**  
 - When the cursor is at the top left corner of the screen pressing the **up** or **down** arrow buttons will let you navigate between displays.
 - When the cursor is over a digital value pressing the **up** or **down** arrow button will toggle the value.
 - When the cursor is over an analog value pressing the **up** or **down** arrow button will increase or decrease its value respectively.

- The enter button** 
 - Pressing the enter button will move the cursor to the control values within a display from top to bottom' left to right.

2.0 OPERATION DISPLAYS:

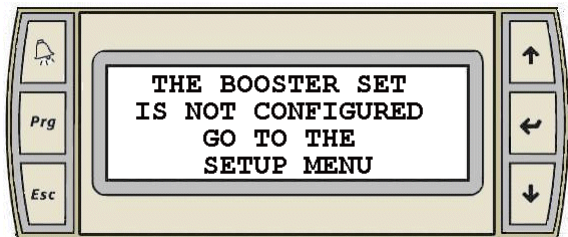
MAIN MENU



- The display is the main menu for the constant speed booster.
- Pressing the **Prg** button at any time will call up the main menu display.
- When the cursor is at the top left corner of the screen, pressing the **up** or **down** arrow will navigate between the active operation displays: Main menu, System overview, Pressure overview, Input overview, Pump overview, and Pump control.

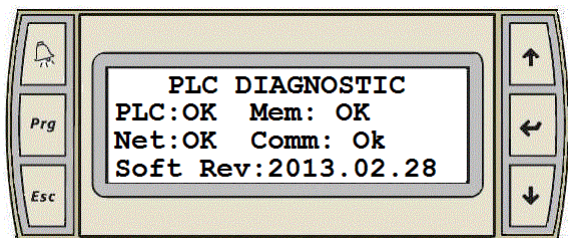
- Pressing the **Enter** key will move the cursor over the **R** of **Remote**, the **S** of **Setup**, and the **D** of **Diag**.
- When the cursor is over **Remote** pressing the **up** or **down** arrow will toggle between remote and local control. The text will toggle between **Remote** and **Local**.
- When the cursor is over **Setup** pressing the **up** or **down** arrow will call up the main setup screen (level 0).
- When the cursor is over **Diag** pressing the **up** or **down** arrow will call up the PLC diagnostic screen.

NO CONFIGURATION DISPLAY



- When the booster has not been setup this display and the main menu display will be the only operation displays to appear.

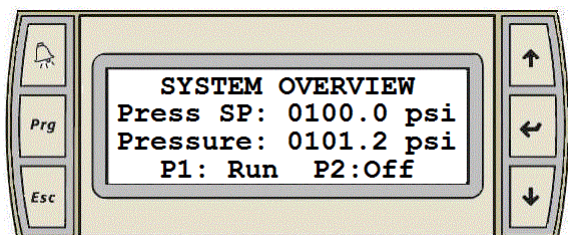
DIAGNOSTIC DISPLAY



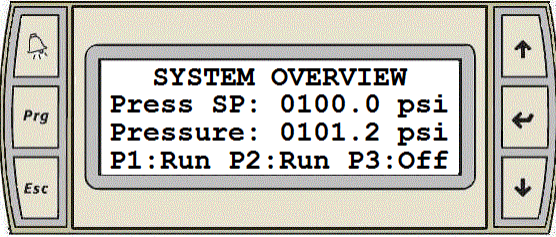
- Line 2 and 3 indicates the PLC, memory, network, and communication status.
- Pressing the **Esc** key will call up the main menu.

SYSTEM OVERVIEW DISPLAYS

Two pumps

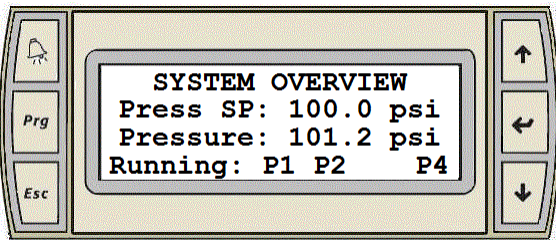


Three pumps

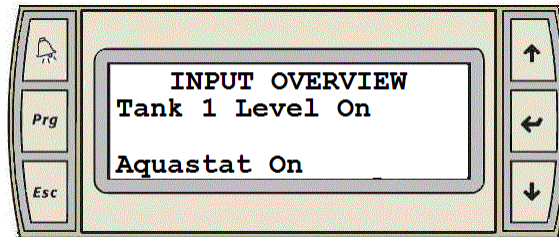


- This screen will only be active and displayed when the suction pressure sensor is enabled.
- This display is for viewing only.
- When the cursor is at the top left corner of the screen, pressing the **up** or **down** arrow will navigate between the active operation displays.
- This screen displays the actual value of the suction and discharge pressure. It also calculates the pump boost.

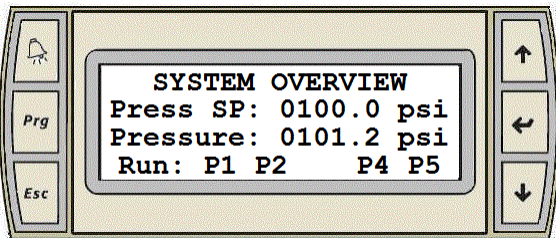
Four pumps



DIGITAL INPUT OVERVIEW DISPLAY



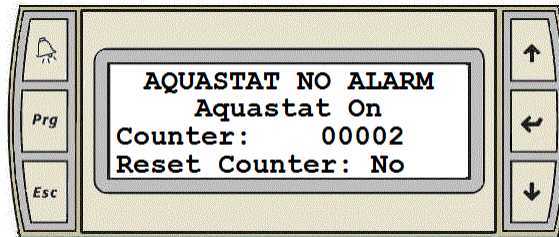
Five pumps



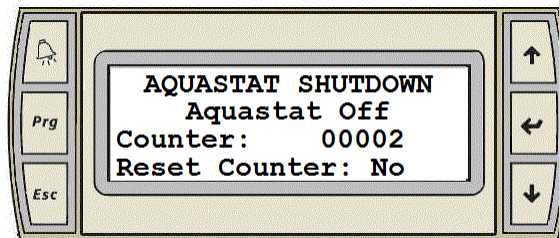
- This screen will only be active and displayed if any of next input switches is enabled: the tank 1 level switch, the tank 2 level switch or the aquastat switch.
- This display is for viewing only.
- When the cursor is at the top left corner of the screen, pressing the **up** or **down** arrow will navigate between the active operation displays.
- This screen displays the actual value of the tank 1 level switch, the tank 2 level switch or the aquastat switch. Any disabled switch is not displayed.

- The system overview screen for the selected amount of pumps will be the only one to be active and displayed.
- This display is for viewing only.
- When the cursor is at the top left corner of the screen, pressing the **up** or **down** arrow will navigate between the active operation displays.
- The first line displays the system (discharge) pressure set point.
- The second line displays the actual system discharge pressure value.
- The third line shows which pump is **on** or **off**.

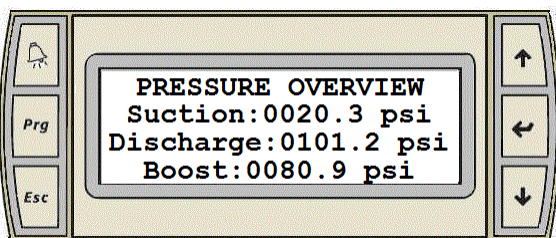
AQUASTAT OVERVIEW DISPLAY



or



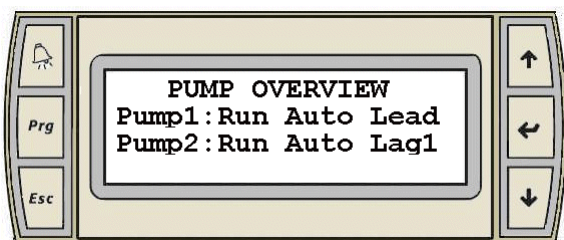
PRESSURE OVERVIEW DISPLAY



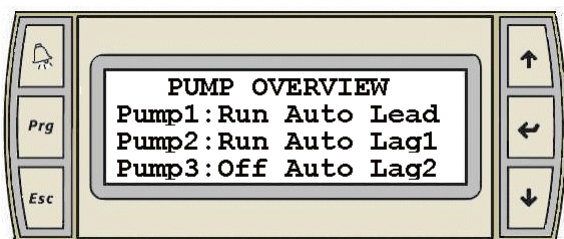
- This screen will only be active and displayed if the aquastat switch is enabled.
- Pressing the **Prg** button at any time will call up the main menu display.
- When the cursor is at the top left corner of the screen, pressing the **up** or **down** arrow will navigate between the active operation displays.
- Pressing the **enter** key will move the cursor over the **n** of **No**.
- When the cursor is over **No** pressing the **up** or **down** arrow will reset the aquastat counter.
- This screen displays the actual status of the aquastat switch, the actual status of the aquastat **no alarm / shutdown** and the aquastat counter.

PUMP OVERVIEW DISPLAYS

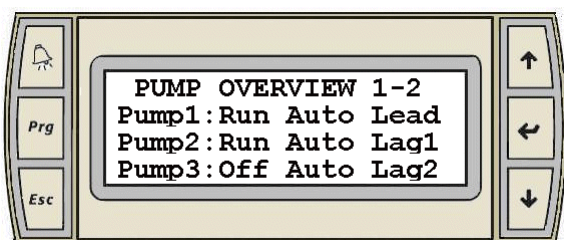
Two pumps



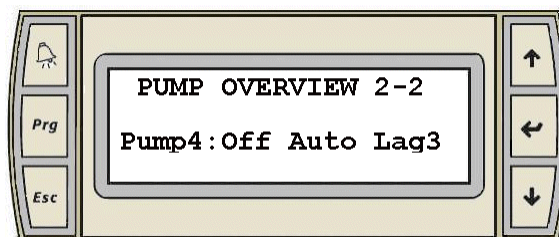
Three pumps



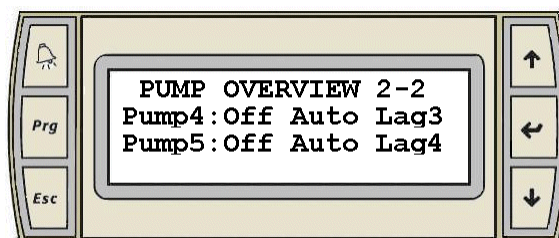
Four & five pumps



Four pumps

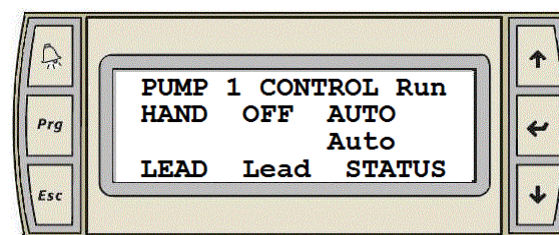


Five pumps



- The pump overview screens for the selected amount of pumps will be the only active and displayed.
- This display is for viewing only.
- When the cursor is at the top left corner of the screen, pressing the **up** or **down** arrow will navigate between the active operation displays.
- This screen will display for each pump: the run feedback **off** or **run**, the mode **hand-off-auto**, the order of the pumps **lead**, **LAG1**, **LAG2**, **LAG3**, or **LAG4**.

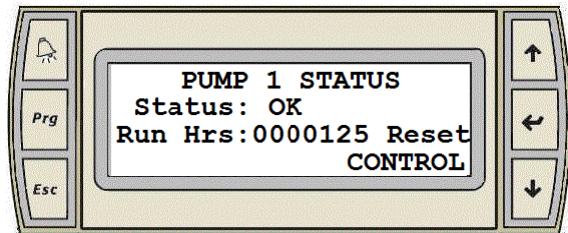
PUMP CONTROL DISPLAYS



- There are similar displays for pump 1 to 5.
- Only the displays corresponding to the number of pumps selected will be active and displayed. For example if the number of pumps is set to two on the pump setup display, only the control display for pump 1 and 2 will be active.
- When the cursor is at the top left corner of the screen pressing the **up** or **down** arrow will navigate between all active operation displays.
- The following information is displayed for the corresponding pump:

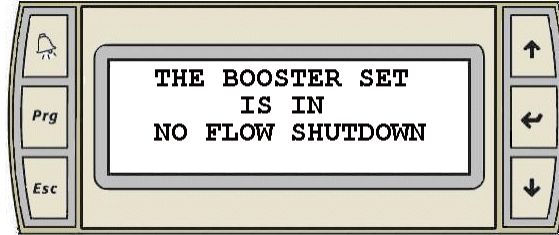
- The top line indicates the pump number, and the pump running status (**run, off**).
- Line 2 is used to select the pump mode: **hand, off, or auto**.
- Line 3 is used to indicate the pump mode. The picture above indicates the pump is in auto mode.
- Line 4 is used to select the lead pump, indicates if the pump is the **lead, LAG1, LAG2, LAG3, or LAG4** pump and call up the pump status display.
- Pressing the **enter** key will move the cursor as follow: HAND, OFF, AUTO, LEAD, STATUS and back to the top left corner.
- When the cursor is over HAND, OFF, or AUTO pressing the **up** or **down** key will change the pump mode to HAND, OFF, AUTO correspondingly.
- When the cursor is over lead, pressing the **up** or **down** arrow will set the pump as lead pump. A pump can only be set as lead pump if it is in auto mode and it is not in alarm.
- When the cursor is over STATUS pressing the **up** or **down** arrow will call up the pump status display.

PUMP STATUS DISPLAYS



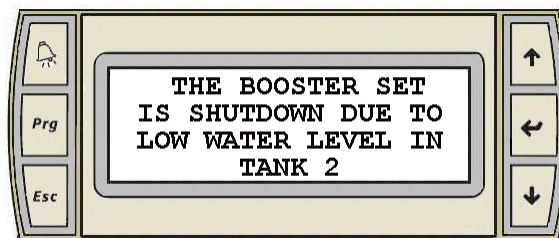
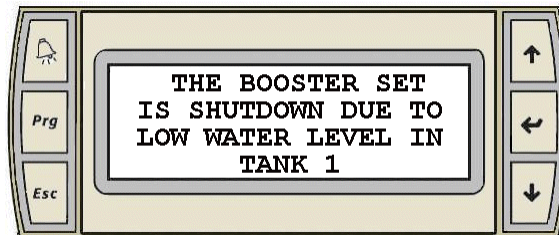
- There are similar displays for pump 1 to 5.
- Only the displays corresponding to the number of pumps selected will be active and displayed.
- When the cursor is at the top left corner of the screen pressing the **up** or **down** arrow will navigate between all active pump status displays.
- Line 2 indicates the status of the pump: **ok** or **alarm**.
- Line 3 indicates the total number of running hours since the last reset.
- Pressing the **enter** key will move the cursor as follow: **Reset, CONTROL** and back to the top left corner.
- When the cursor is over **Reset** pressing the **up** or **down** arrow will reset the number of run hours to zero.
- When the cursor is over **CONTROL** pressing the **up** or **down** arrow will call up the pump control display.
- Pressing the **Esc** button at anytime will call up the pump Overview display.

NO FLOW SHUTDOWN DISPLAY



- When the booster set stops because of **No Flow Shutdown (sleep mode)** this display appears.
- When the booster set starts again the system overview display appears.
- When the cursor is at the top left corner of the screen pressing the **up** or **down** arrow will navigate between all active operation displays.


LOW TANK LEVEL SHUTDOWN DISPLAYS

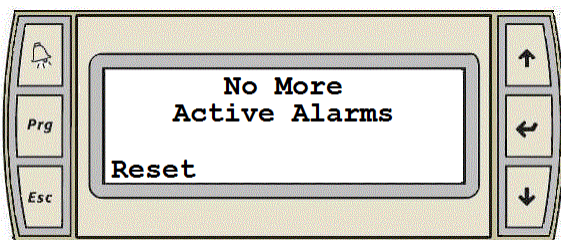


- When the booster set stops due to low water level in Tank 1 or 2 the corresponding display appears.
- When the booster set starts again the system overview display appears.
- When the cursor is at the top left corner of the screen pressing the **up** or **down** arrow will navigate between all active operation displays.

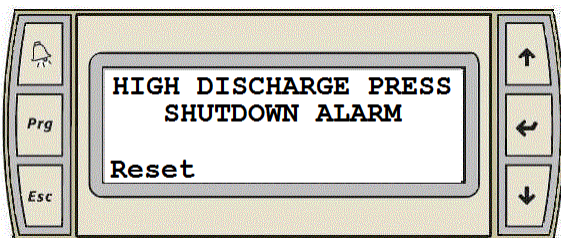
3.0 ALARM MANAGEMENT DISPLAYS:

ALARM DISPLAYS

- Pressing the **alarm** button  at any time will call up the alarm display.
- If there is no active alarm the following **No More Active Alarms** display will appear:



- This display will also appear when navigating through a number of active alarm displays to indicate when you reach the end of the list of active alarms.
- If there is one or more active alarms an alarm display similar to the one below will appear:

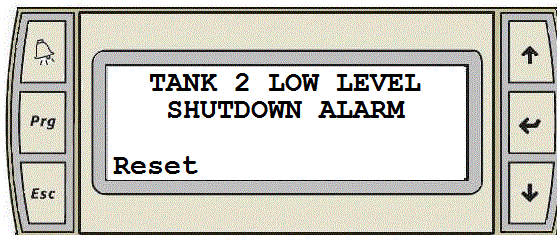
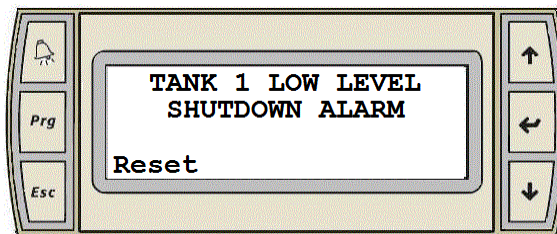


- When the cursor is at the top left corner of the screen pressing the **up** or **down** arrow will navigate between the active alarm displays.
- When you reach the end of the alarm list the **No More Active Alarms** display will appear.
- All alarm displays are setup as the one above.
- The top two lines give a brief alarm description.
- When the cursor is above **Reset**, pressing the **up** or **down** arrow will reset all non active alarm. It will also silence the alarm horn and stop the **alarm** button from flashing red. If there are no more active alarms the **alarm** button will turn white.

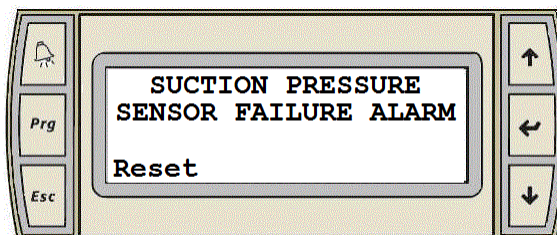
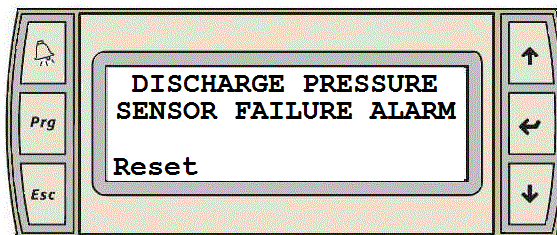
These are all the different alarm displays in the order they will appear when navigating through the active alarms. Only the displays associated with an active alarm will appear.

1. Low water level shutdown alarms.

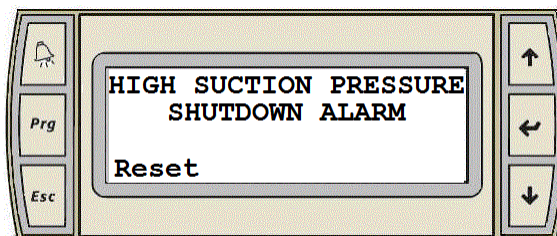
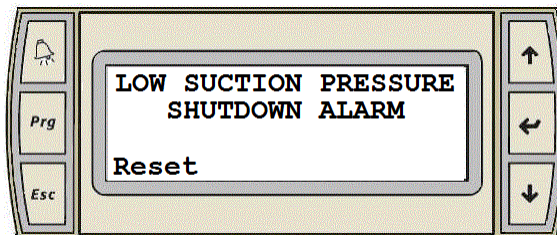
Tank ½ low level switch is off.

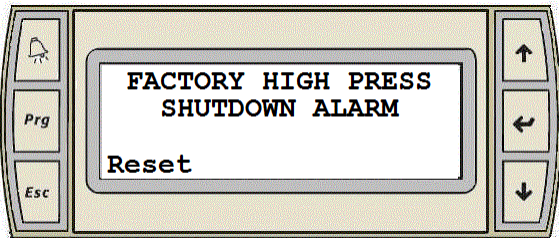
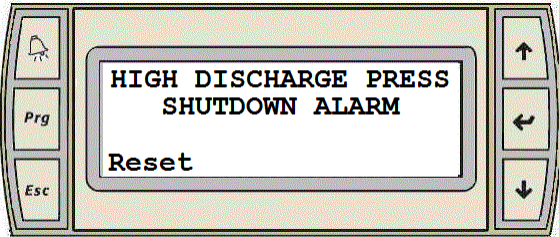
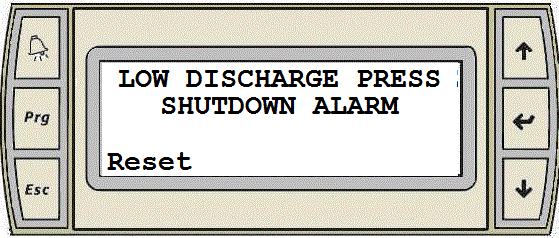


2. Pressure sensors failure alarms

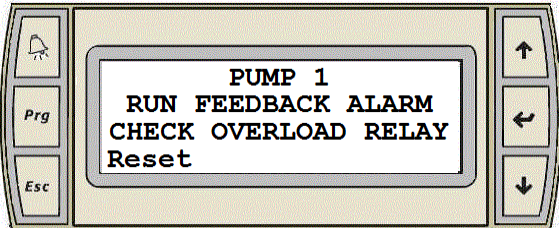


3. Pressure alarms



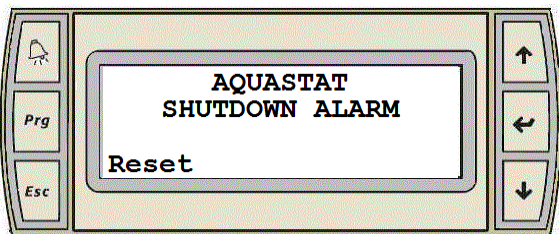


4. Pump alarms (similar for pump 1 to 5)



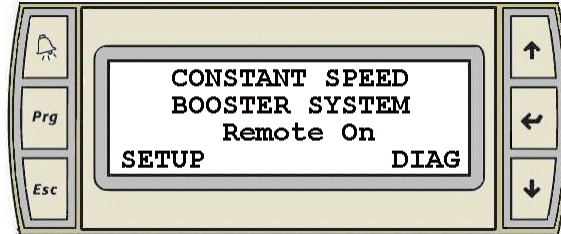
5. Aquastat alarm.

Aquastat temperature switch is off (water temperature is too high = no flow)



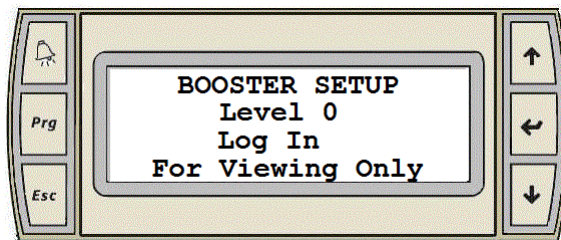
4.0 SYSTEM SETUP DISPLAYS:

To go to the **main setup screen** first go to the **main menu** by pressing the **Prg** button.



- Press the **enter** key to move the cursor over **SETUP**.
- When the cursor is over **SETUP** pressing the **up** or **down** arrow will call up the main setup screen.

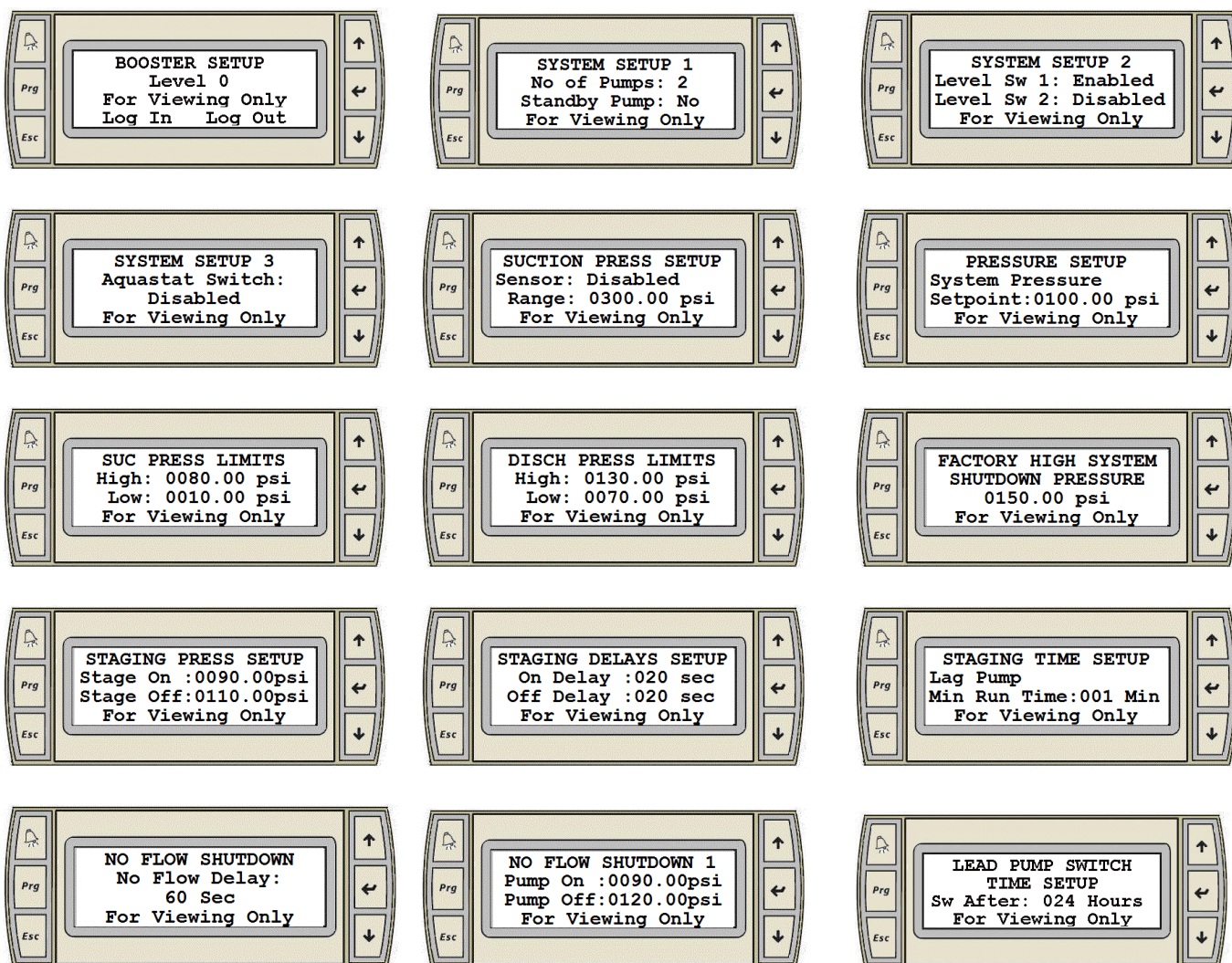
MAIN SETUP DISPLAY (LEVEL 0)



- The setup displays are divided in three levels with each level having the same number of displays with different level of access. Level 0 setup displays are for viewing only and no adjustment can be made. Level 1 setup displays can be used for changing the system setup and restoring the system factory defaults. Level 2 setup displays can be used for changing the system setup, and saving and restoring the system defaults.
- To access Level 1 and 2 an user needs to enter the proper password: Level 1 password is 9393, Level 2 password is for factory setup.
- Pressing the **enter** key will move the cursor over **LOG IN**.
- When the cursor is over **LOG IN** pressing the **up** or **down** arrow will call up the **LOG IN** display.

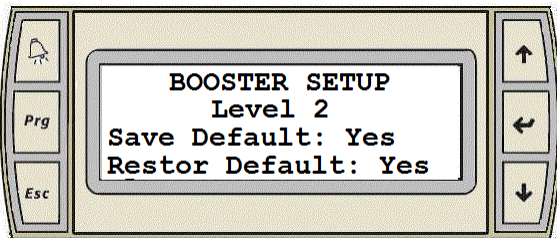
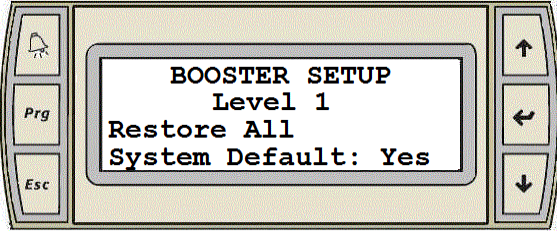


- Pressing the **enter** key will move the cursor above the number area.
- When the cursor is over the number area, pressing the **up** or **down** arrow will increase or decrease the password number.
- When you reach the value you want 9393 for level 1, or '****' for level 2, press the **enter** key. This will call up the main setup for the password you selected.
- If you enter a wrong password value nothing will happen.
- After a password is entered, it will log out automatically after 5 minutes without activity.
- When the cursor is at the top left corner of the screen pressing the **up** or **down** arrow will navigate between the level 0 setup displays.
- These displays will give anybody a quick look at all the system setup.
- The following are all the level 0 setup displays



SETUP DISPLAYS - LEVEL 1 AND LEVEL 2

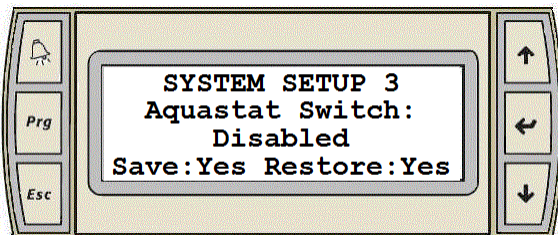
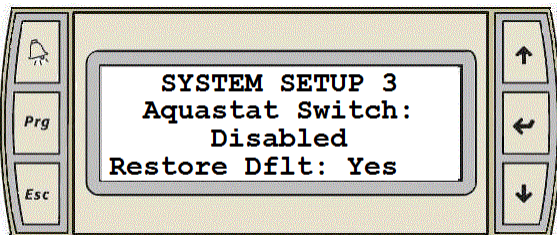
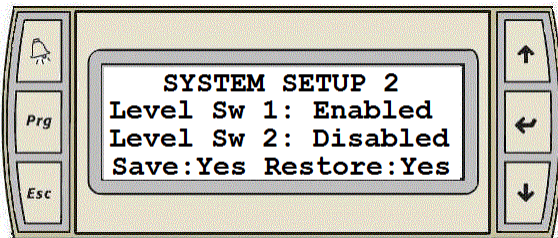
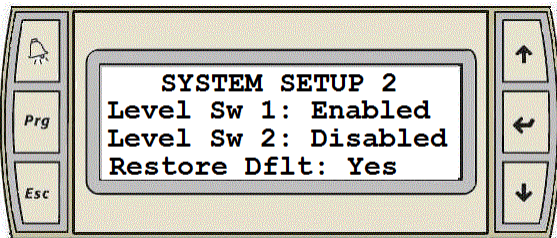
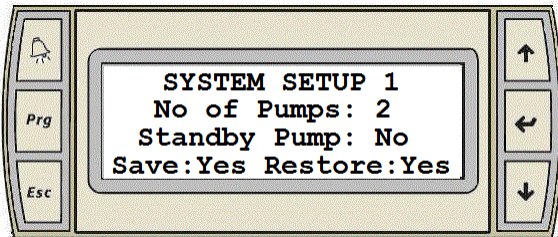
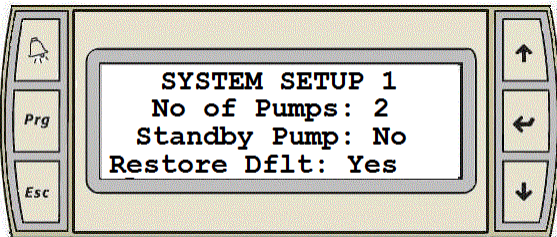
MAIN SETUP DISPLAY



- These are the first displays to appear when entering the **LOG IN** password for level 1 and 2 respectively.

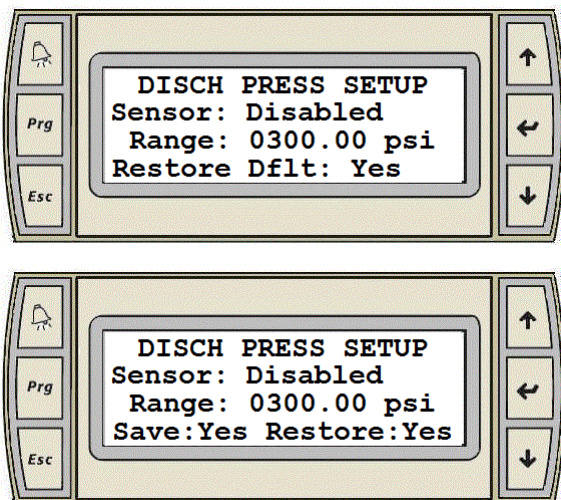
- When the cursor is at the top left corner of the screen, pressing the **up** or **down** arrow will navigate between the active setup screens of the respective Level.
- On the level 1 display pressing the **enter** key will move the cursor over **Yes**.
- When the cursor is over **Yes** pressing the **up** or **down** arrow will restore the default settings for all the values in all the setup displays. This is indicated by the text changing from **Yes** to **Ok** for a few seconds.
- On the level 2 display pressing the **enter** key will move the cursor over **Yes** beside **Save Default**, and **Restore Default**.
- When the cursor is over **Yes** beside **Save Default** pressing the **up** or **down** arrow will save the setup values in all setup displays as default values. The text will change from **Yes** to **Ok** for a few seconds.
- When the cursor is over **Yes** beside **Restore Default** pressing the **up** or **down** arrow will restore the default settings for all the values in all the setup displays. The text will change from **Yes** to **Ok** for a few seconds.

SYSTEM SETUP DISPLAY



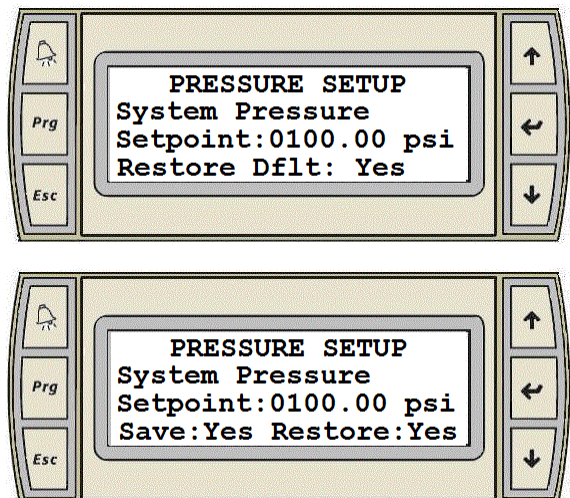
- When the cursor is at the top left corner of the screen, pressing the **up** or **down** arrow will navigate between the active setup screens of the respective Level.
- Pressing the **enter** key will move the cursor over all setup values on same display, over **Yes** beside Save and Restore and back at the top left corner.
- When the cursor is over the value beside **No of Pumps**, press the **up** or **down** key to select the number of pumps.
- When the cursor is over the text beside **Standby Pump** pressing the **up** or **down** key will select between disabling (No), and enabling (Yes) a standby pump.
- When the cursor is over the text beside **Level Sw 1** pressing the **up** or **down** key will select between disabling (Disabled), and enabling (Enabled) the level switch 1 sensor.
- When the cursor is over the text beside **Level Sw 2** pressing the **up** or **down** key will select between disabling (Disabled), and enabling (Enabled) the level switch 2 sensor.
- When the cursor is over the text below **Aquastat Switch** pressing the **up** or **down** key will select between disabling (Disabled), and enabling (Enabled) the aquastat switch sensor.
- When the cursor is over **Yes** beside **Save** pressing the **up** or **down** arrow will save the settings on this screen as default values. The text will change from **Yes** to **Ok** for a few seconds.
- When the cursor is over **Yes** beside **Restore Dflt** or **Restore** pressing the **up** or **down** arrow will restore the default settings for the settings on this screen. The text will change from **Yes** to **Ok** for a few seconds.

DISCHARGE PRESSURE SENSOR SETUP DISPLAY



- When the cursor is at the top left corner of the screen, pressing the **up** or **down** arrow will navigate between the active setup screens of the respective Level.
- Pressing the **enter** key will move the cursor over the text beside **Sensor**, the value beside **Range**, over the engineering unit, over **Yes** beside Save and Restore, and back at the top left corner.
- When the cursor is over the text beside **Sensor** pressing the **up** or **down** key will select between disabling (Disabled), and enabling (Enabled) the discharge pressure sensor.
- When the cursor is over the value beside **Range**, pressing the **up** or **down** key will set the range for the discharge pressure sensor to the desired value.
- When the cursor is over the engineering unit, pressing the **up** or **down** key will select between: psi, ft, Kpa, m, and bar.
- When the cursor is over **Yes** beside **Save** pressing the **up** or **down** arrow will save the settings on this screen as default values. The text will change from **Yes** to **Ok** for a few seconds.
- When the cursor is over **Yes** beside **Restore Dflt** or **Restore** pressing the **up** or **down** arrow will restore the default settings for the settings on this screen. The text will change from **Yes** to **Ok** for a few seconds.

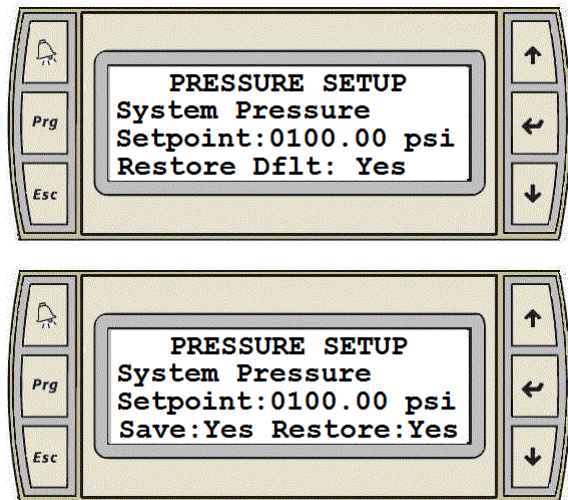
SUCTION PRESSURE SENSOR SETUP DISPLAY



- When the cursor is at the top left corner of the screen, pressing the **up** or **down** arrow will navigate between the active setup screens of the respective Level.
- Pressing the **enter** key will move the cursor over the text beside **Sensor**, the value beside **Range**, over **Yes** beside Save and Restore, and back at the top left corner.

- When the cursor is over the text beside **Sensor** pressing the **up** or **down** key will select between disabling (Disabled), and enabling (Enabled) the suction pressure sensor.
- When the cursor is over the value beside **Range**, pressing the **up** or **down** key will set the range for the suction pressure sensor to the desired value.
- When the cursor is over **Yes** beside **Save** pressing the **up** or **down** arrow will save the settings on this screen as default values. The text will change from **Yes** to **Ok** for a few seconds.
- When the cursor is over **Yes** beside **Restore Dflt** or **Restore** pressing the **up** or **down** arrow will Restore the Default Settings for the settings on this screen. The text will change from **Yes** to **Ok** for a few seconds.

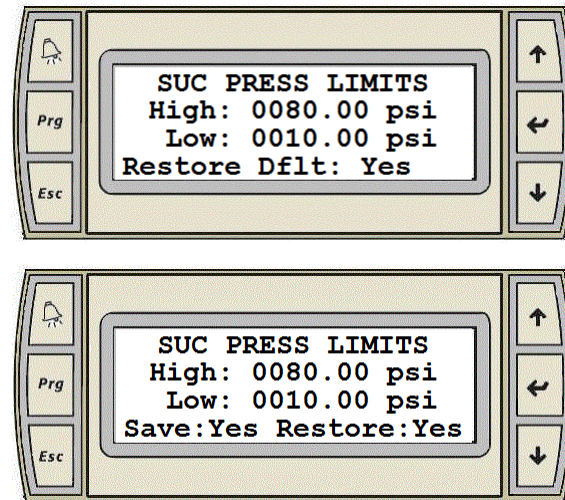
SYSTEM PRESSURE SETPOINT SETUP DISPLAY



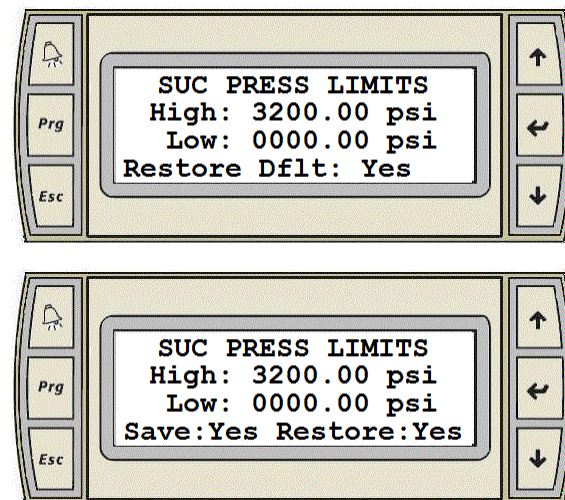
- When the cursor is at the top left corner of the screen, pressing the **up** or **down** arrow will navigate between the active setup screens of the respective Level.
- Pressing the **enter** key will move the cursor over the value beside **Setpoint** over **Yes** beside save and restore and back at the top left corner.
- When the cursor is over the value beside **Setpoint**, pressing the **up** or **down** key will set the system pressure setpoint to the desired value.
- When the cursor is over **Yes** beside **Save** pressing the **up** or **down** arrow will save the settings on this screen as default values. The text will change from **Yes** to **Ok** for a few seconds.
- When the cursor is over **Yes** beside **Restore Dflt** or **Restore** pressing the **up** or **down** arrow will restore the default settings for the settings on this screen. The text will change from **Yes** to **Ok** for a few seconds.

SUCTION PRESSURE ALARM SETPOINTS SETUP DISPLAY
High and low suction pressure setpoints

Enabled limits



Disabled limits



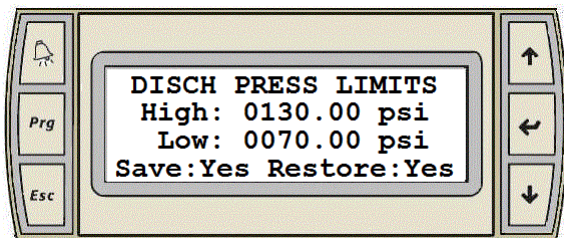
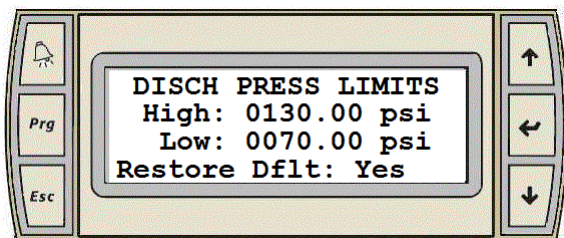
- When the cursor is at the top left corner of the screen, pressing the **up** or **down** arrow will navigate between the active setup screens of the respective level.
- This display is only active when the suction pressure sensor is enabled.
- Pressing the **enter** key will move the cursor over the value beside **High**, the value beside **Low**, over **Yes** beside save and restore, and back at the top left corner.
- When the cursor is over the value beside **High**, pressing the **up** or **down** key will set the high suction pressure shutdown setpoint to the desired value.
- When the cursor is over the value beside **Low**, pressing the **up** or **down** key will set the low suction pressure shutdown setpoint to the desired value.

- When the cursor is over **Yes** beside **Save** pressing the **up** or **down** arrow will save the settings on this screen as default Values. The text will change from **Yes** to **Ok** for a few seconds.
- When the cursor is over **Yes** beside **Restore Dflt** or **Restore** pressing the **up** or **down** arrow will restore the default settings for the settings on this screen. The text will change from **Yes** to **Ok** for a few seconds.

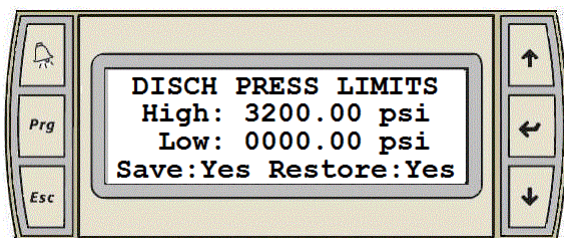
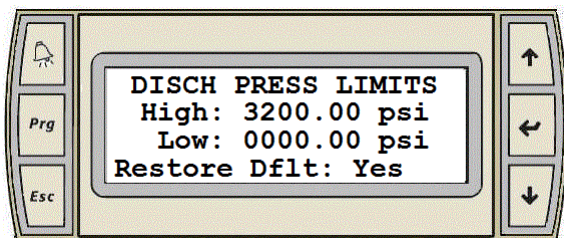
DISCHARGE PRESSURE ALARM SETPOINTS SETUP DISPLAYS

High and low discharge pressure setpoints

Enabled limits

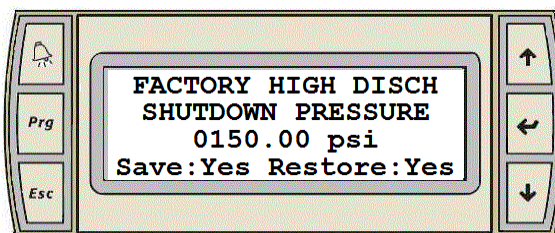
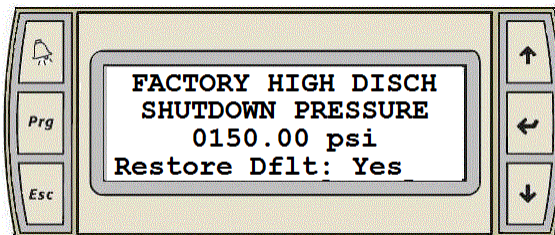


Disabled limits



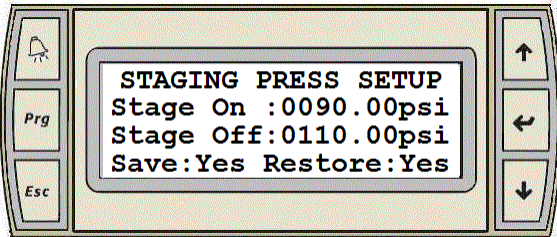
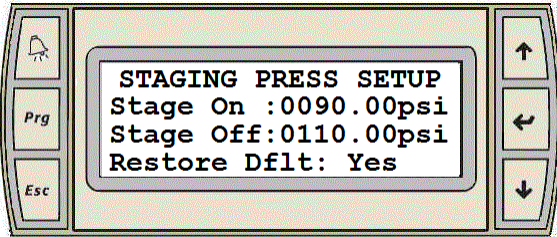
Factory High Discharge Setpoint

Do not change it. It is a factory setup limit.



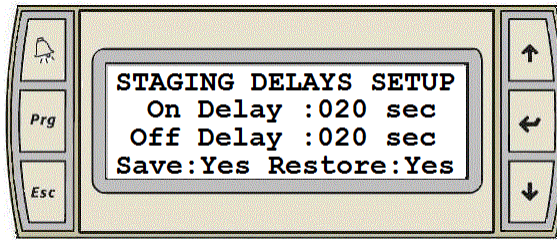
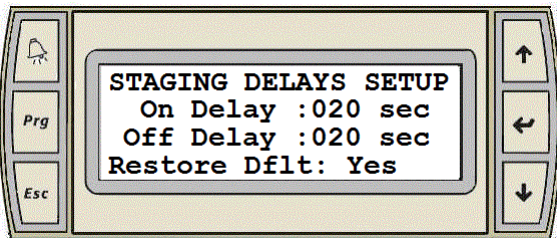
- When the cursor is at the top left corner of the screen, pressing the **up** or **down** arrow will navigate between the active setup screens of the respective level.
- Pressing the **enter** key will move the cursor over all setup values on same display, over **Yes** beside save and restore and back at the top left corner.
- When the cursor is over the value beside **High**, pressing the **up** or **down** key will set the high discharge pressure shutdown setpoint to the desired value.
- When the cursor is over the value beside **Low**, pressing the **up** or **down** key will set the low discharge pressure shutdown setpoint to the desired value.
- When the cursor is over the value below **FACTORY HIGH DISCHARGE SHUTDOWN PRESSURE**, pressing the **up** or **down** key will set the factory high discharge pressure shutdown setpoint to the desired value. It is done in the factory and should not be changed by any user.
- When the cursor is over **Yes** beside **Save** pressing the **up** or **down** arrow will save the settings on this screen as default values. The text will change from **Yes** to **Ok** for a few seconds.
- When the cursor is over **Yes** beside **Restore Dflt** or **Restore** pressing the **up** or **down** arrow will restore the default settings for the settings on this screen. The text will change from **Yes** to **Ok** for a few seconds.

STAGING PRESSURE SETPOINT SETUP DISPLAY



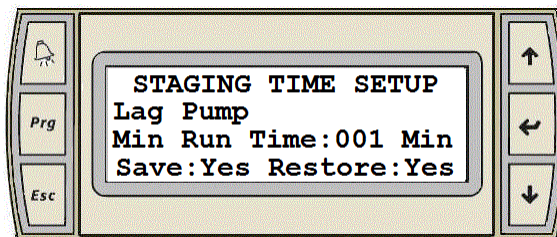
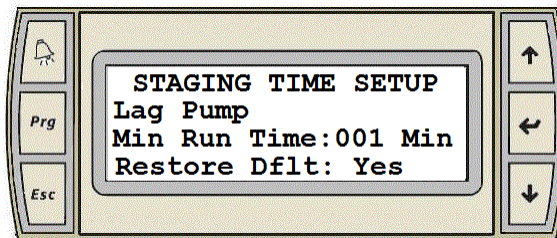
- When the cursor is at the top left corner of the screen, pressing the **up** or **down** arrow will navigate between the active setup screens of the respective Level.
- Pressing the **enter** key will move the cursor over the value beside **Stage On**, the value beside **Stage Off**, over **Yes** beside save and restore, and back at the top left corner.
- When the cursor is over the value beside **Stage On**, pressing the **up** or **down** key will set the stage on pressure setpoint to the desired value.
- When the cursor is over the value beside **Stage Off**, pressing the **up** or **down** key will set the stage off pressure setpoint to the desired value.
- When the cursor is over **Yes** beside **Save** pressing the **up** or **down** arrow will save the settings on this screen as default values. The text will change from **Yes** to **Ok** for a few seconds.
- When the cursor is over **Yes** beside **Restore Dflt** or **Restore** pressing the **up** or **down** arrow will restore the default settings for the settings on this screen. The text will change from **Yes** to **Ok** for a few seconds.

STAGING DELAY SETPOINT SETUP DISPLAY



- When the cursor is at the top left corner of the screen, pressing the **up** or **down** arrow will navigate between the active setup screens of the respective Level.
- Pressing the **enter** key will move the cursor over the value beside **On Delay**, the value beside **Off Delay**, over **Yes** beside Save and Restore, and back at the top left corner.
- When the cursor is over the value beside **On Delay**, pressing the **up** or **down** key will set the stage on delay setpoint to the desired value.
- When the cursor is over the value beside **Off Delay**, pressing the **up** or **down** key will set the stage off delay setpoint to the desired value.
- When the cursor is over **Yes** beside **Save** pressing the **up** or **down** arrow will save the settings on this screen as default values. The text will change from **Yes** to **Ok** for a few seconds.
- When the cursor is over **Yes** beside **Restore Dflt** or **Restore** pressing the **up** or **down** arrow will restore the default settings for the settings on this screen. The text will change from **Yes** to **Ok** for a few seconds.

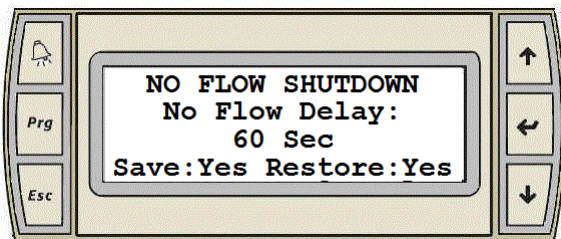
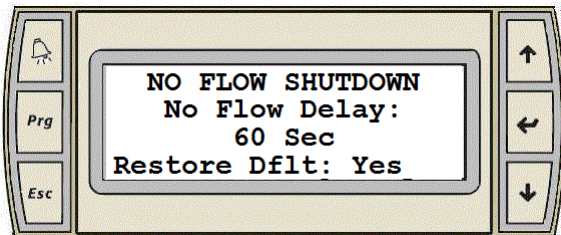
MINIMUM RUNTIME SETUP DISPLAY



- When the cursor is at the top left corner of the screen, pressing the **up** or **down** arrow will navigate between the active setup screens of the respective Level.

- Pressing the **enter** key will move the cursor over the value beside **Min Run Time**, over **Yes** beside save and restore, and back at the top left corner.
- When the cursor is over the value beside **Min Run Time**, pressing the **up** or **down** key will set the lag pump minimum run time setpoint to the desired value. This is the minimum run time the lag pump will run before shutting down.
- When the cursor is over **Yes** beside **Save** pressing the **up** or **down** arrow will save the settings on this screen as default values. The text will change from **Yes** to **Ok** for a few seconds.
- When the cursor is over **Yes** beside **Restore Dflt** or **Restore** pressing the **up** or **down** arrow will restore the default settings for the settings on this screen. The text will change from **Yes** to **Ok** for a few seconds.

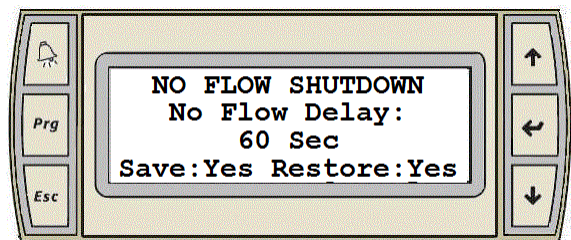
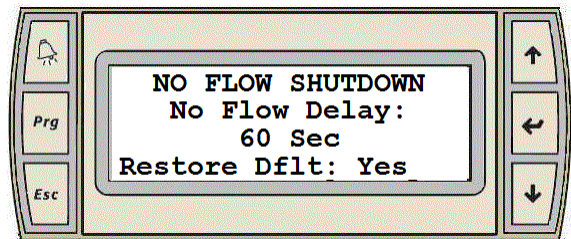
NO FLOW SHUTDOWN SETUP DISPLAY



- When the cursor is at the top left corner of the screen, pressing the **up** or **down** arrow will navigate between the active setup screens of the respective Level.
- Pressing the **enter** key will move the cursor over the value beside **Delay**, over **Yes** beside Save and Restore, and back at the top left corner.
- When the cursor is below the value beside **Delay**, pressing the **up** or **down** key will set the No Flow Shutdown Delay Setpoint to the desired value.
- When the cursor is over **Yes** beside **Save** pressing the **up** or **down** arrow will save the settings on this screen as default values. The text will change from **Yes** to **Ok** for a few seconds.

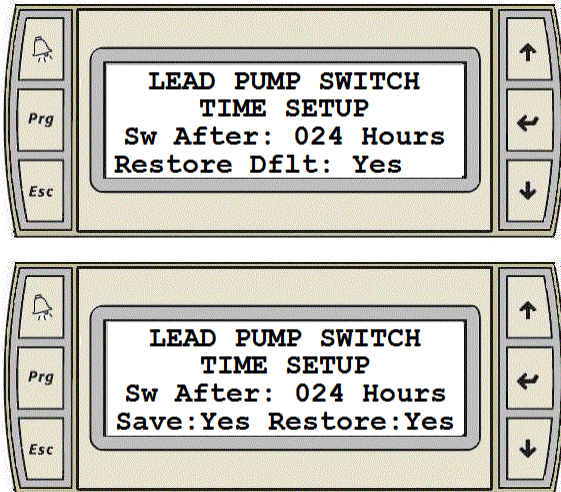
- When the cursor is over **Yes** beside **Restore Dflt** or **Restore** pressing the **up** or **down** arrow will restore the default settings for the settings on this screen. The text will change from **Yes** to **Ok** for a few seconds.

NO FLOW SHUTDOWN PRESSURE SETPOINT SETUP DISPLAY



- When the cursor is at the top left corner of the screen, pressing the **up** or **down** arrow will navigate between the active setup screens of the respective Level.
- Pressing the **enter** key will move the cursor over the value beside **Pump On**, over the value beside **Pump Off**, over **Yes** beside save and restore, and back at the top left corner.
- When the cursor is over the value beside **Pump On**, pressing the **up** or **down** key will set the no flow shutdown pump on pressure setpoint to the desired value. It is same value as the stage on pump pressure.
- When the cursor is over the value beside **Pump Off**, pressing the **up** or **down** key will set the no flow shutdown pump off pressure setpoint to the desired value.
- When the cursor is over **Yes** beside **Save** pressing the **up** or **down** arrow will save the settings on this screen as default values. The text will change from **Yes** to **Ok** for a few seconds.
- When the cursor is over **Yes** beside **Restore Dflt** or **Restore** pressing the **up** or **down** arrow will restore the default settings for the settings on this screen. The text will change from **Yes** to **Ok** for a few seconds.

LEAD PUMP SWITCH TIME SETUP DISPLAY



- When the cursor is at the top left corner of the screen, pressing the **up** or **down** arrow will navigate between the active setup screens of the respective level.
- Pressing the **enter** key will move the cursor over the value beside **Sw After**, over **Yes** beside save and restore, and back at the top left corner.
- When the cursor is over the value beside **Sw After**, pressing the **up** or **down** key will set the lead pump run hours setpoint to the desired value. The LAG 1 pump will become the lead pump after the lead pump runs for the set amount of time.
- When the cursor is over **Yes** beside **Save** pressing the **up** or **down** arrow will save the settings on this screen as default values. The text will change from **Yes** to **Ok** for a few seconds.
- When the cursor is over **Yes** beside **Restore Dflt** or **Restore** pressing the **up** or **down** arrow will restore the default settings for the settings on this screen. The text will change from **Yes** to **Ok** for a few seconds.

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