



(205) 533-0571
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**APC-38
Autonomous Pump
Controller**



**Quick Reference
Card Guide**

| Pin # | Description | Pin # | Description |
|-------|-------------------|-------|----------------------------------|
| 1 | Pump 1 Status | 27 | Power Supply Input - Ground |
| 2 | Pump 2 Status | 28 | Power Supply Input - +24VDC |
| 3 | Digital Input 3 | 29 | |
| 4 | Digital Input 4 | 30 | |
| 5 | Digital Input 5 | 31 | |
| 6 | Digital Input 6 | 32 | |
| 7 | Digital Input 7 | 33 | |
| 8 | Digital Input 8 | 34 | Programming / Communication Port |
| 9 | | 35 | |
| 10 | Pump 1 Run | 36 | |
| 11 | Pump 2 Run | 37 | |
| 12 | Pump 1 Failed | 38 | |
| 13 | Pump 1 Failed | 39 | |
| 14 | High PSI Shutdown | 40 | |
| 15 | Low PSI Shutdown | 41 | |
| 16 | Low Suction SD | 42 | |
| 17 | Digital Output 8 | 43 | |
| 18 | | 44 | |
| 19 | +24VDC Loop Power | 45 | Remote LCD and Keypad Port |
| 20 | System Pressure | 46 | |
| 21 | +24VDC Loop Power | 47 | |
| 22 | Suction Pressure | 48 | |
| 23 | +24VDC Loop Power | 49 | Analog Output 1 Ground |
| 24 | 4mA–20mA Input 3 | 50 | Analog Output 1 4mA-20mA |
| 25 | +24VDC Loop Power | 51 | Analog Output 2 Ground |
| 26 | 4mA–20mA Input 4 | 52 | Analog Output 2 4mA-20mA |

Digital Inputs:

Activate by switching to GND.
Internal pull-up to +5VDC

Digital Outputs:

+24VDC @ 250mA
Activates by switching to GND.

Analog Inputs:

4mA – 20mA @ +24VDC

Analog Outputs:

4mA – 20mA @ +24VDC

Physical Equipment:

DIN Rail Mountable
6.125" Wide, 3.375" High, 2.281" Deep

User Interface:

2 Line, 16 Character LCD with back light
4 Button User Interface

PFiX Controls®

Main Screens

**SYSTEM 119.6 PSI
MSG> PUMP OFF**

Press 

**PUMP CONTROL
START? <SELECT>**

Press 

**R119.8 P119.6PSI
A119.5 S 11.7PSI**

Press 

Return to
Main screen



Press "Menu" from the main screen to display setup menu.

The main screen displays the refined system pressure, control status, and any active alarms.

The pump control screen allows you to interrupt the automatic operation of the controller by stopping or starting a pump manually. Automatic operation resumes immediately. If you manually started a pump then the pump will run until the system pressure reaches the "Pump Off" level. If you manually stopped a pump then the pump will remain off until the system pressure reaches the "Pump On" level.

The next screen displays the raw system pressure "R", the partially refined pressure "A", the refined pressure "P", and the suction pressure "S".

SETUP MENU
PRESSURE

Press



SETUP MENU
PUMPS

Press



SETUP MENU
HI-LOW PRESSURE

Press



SETUP MENU
LOW SUCTION

Press



SYSTEM MENU
OPTIONS

Press



PfIX Controls
TLC 2.4 05-16-03

Press



Pressing **SELECT** to display the sub-menu.
Press **MENU** to return to the main screen.

Pressure
Menu

The **PRESSURE** menu determines the pressure transducer range, pump off pressure and delay, pump on pressure, and delay, lockout period, pressure filter factor, pump 1 offset, and pump 2 offset.

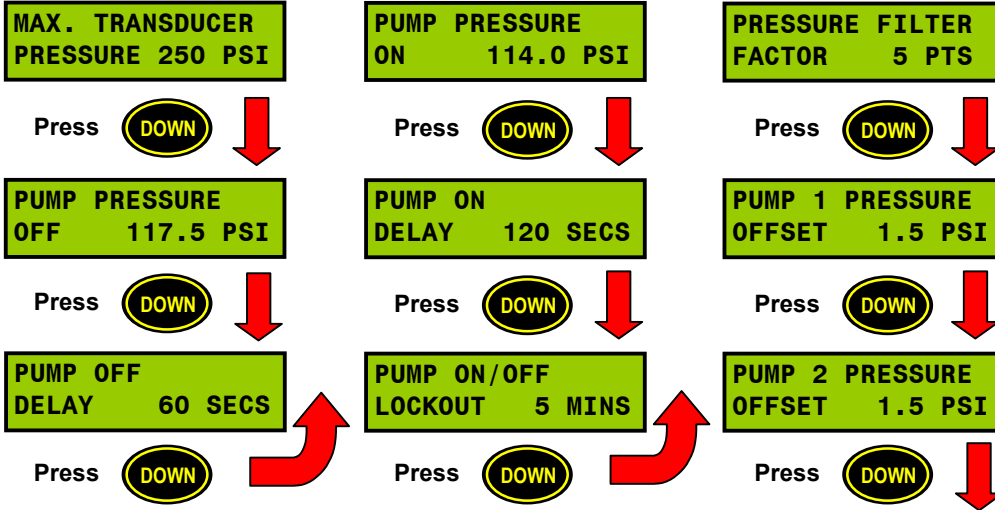
The **PUMPS** menu determines pump alternation, pump start sequencing, pump start delay, pump stop sequencing, and pump stop delay.

The **HI-LOW PRESSURE** menu determines high and low discharge pressure shutdowns, pressure levels and delays.

The **LOW SUCTION** menu determines low suction pressure shutdown, pressure level and delay.

The **OPTIONS** menu allows setting of the "Back light off" delay. A setting greater than 300 sets back light on indefinitely.

The **PfIX CONTROLS** screen simply displays the software version and date.



Pressing **SELECT** to display the sub-menu.
Press **MENU** to return to the main screen.

Transducer
Menu

The **TRANSDUCER** menu defines the pressure range.

The **PUMP OFF** pressure and delay menus defines when pumps switch off.

The **PUMP ON** pressure and delay menus defines when pumps switch on.

The **LOCKOUT** delay menu inhibits control during lockout period.

The **FACTOR** menu defines how quickly controller responds to pressure changes.

The **OFFSET** menus define the pressure each pump adds to system.

ALTERNATE PUMPS
DISABLE

Press **DOWN**

PUMP START
SEQUENCE DISABLE

Press **DOWN**

PUMP START SEQ.
DELAY 30 SECS

Press **DOWN**

PUMP STOP
SEQUENCE DISABLE

Press **DOWN**

PUMP STOP SEQ.
DELAY 60 SECS

Press **DOWN**

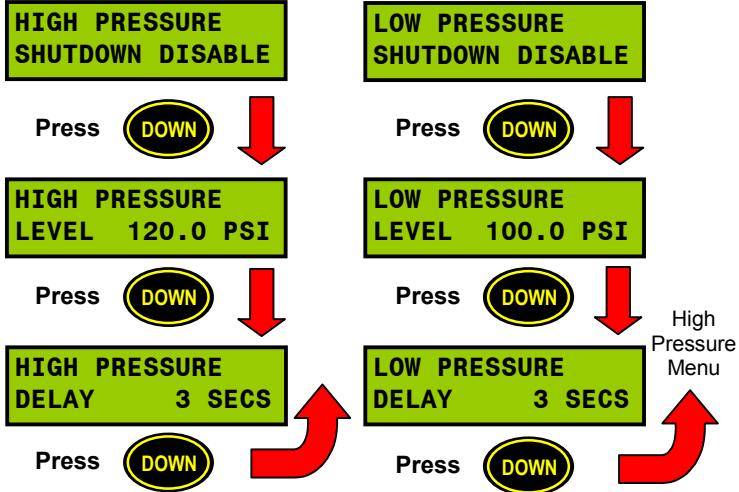
Alternate
Menu

Pressing **SELECT** to display the sub-menu.
Press **MENU** to return to the main screen.

The **ALTERNATE PUMPS** menu selects whether the controller alternates between pumps or runs only pump one.

The **PUMP START** sequence and delay menus allow two pumps to run in sequence with a delay between starting each pump.

The **PUMP STOP** sequence and delay menus allow two pumps to run in sequence with a delay between stopping each pump.



The **HIGH PRESSURE** shutdown, level, and delay menus allow controller to shutdown the pumps should the system pressure exceed the set level.

The **LOW PRESSURE** shutdown, level, and delay menus allow controller to shutdown the pumps should the system pressure drop below the set level.

Pressing **SELECT** to display the sub-menu.
 Press **MENU** to return to the main screen.

LOW SUCTION
SHUTDOWN DISABLE

Press



MAX. SUCTION
PRESSURE 25 PSI

Press



LOW SUCTION
PRESSURE 5 PSI

Press



LOW SUCTION
DELAY 20 SECS

Press



Low Suction
Menu

Pressing **SELECT** to display the sub-menu.
Press **MENU** to return to the main screen.

The **LOW SUCTION** shutdown, pressure, and delay menus allow controller to shutdown the pumps should the suction pressure drop below the set level.

The **MAX. SUCTION PRESSURE** menu defines the range of the suction pressure transducer.

BACK LIGHT OFF
DELAY 30 SECS

Press



Back Light
Off Menu

The **BACK LIGHT OFF** delay menu provides a setting to delay the LCD back light from switching off after the last key press. The default setting of 30 seconds would switch off the back light 30 seconds after the last key press. A setting larger than 300 prevents the back light from being switched off.

Pressing **SELECT** to display the sub-menu.
Press **MENU** to return to the main screen.

SYSTEM 115.7 PSI
MSG> LOW SUCT SD

Highest
Priority

Press



SYSTEM 115.7 PSI
MSG> LOW PSI SD

Press



SYSTEM 115.7 PSI
MSG> HIGH PSI SD

Press



SYSTEM 115.7 PSI
MSG> PUMP 2 FAIL

Press



SYSTEM 115.7 PSI
MSG> PUMP 1 FAIL

Press



Lowest
Priority

The shutdown **SD** alarms inhibits the running of pumps until after acknowledging the alarms.

Alarm notification provided by message area on second line of main display screen. Alarms listed on this page are shown by priority, highest to lowest. Press the **UP** key to acknowledge alarms. Acknowledging alarms clears the displayed message. Lower priority alarms will display after acknowledging higher priority alarms. Alarms will not re-trigger until alarm condition returns to normal.

PUMP PRESSURE
OFF 117.5 PSI

Press



Press **SELECT** key to activate data-entry mode. The black cursor block appears indicating the data entry mode. Edit numeric values one digit at a time, from highest to lowest. Pressing the **UP** and **DOWN** key changes a numeric digit by one respectively. Press **SELECT** to accept the entry and move to the next digit. To skip a digit, press **SELECT**. Pressing **SELECT** at the last digit, accepts the entire number as the new setting for the menu item.

Pressing **MENU** key during data entry, (i.e. Black Cursor Block appears), cancels the changes made and returns the controller to the non-data entry mode, (i.e. Black Cursor Block disappears).

PUMP PRESSURE
OFF 1**1**7.5 PSI

Press



PUMP PRESSURE
OFF 1**1**7.5 PSI

Press



PUMP PRESSURE
OFF 11**7**.5 PSI

Press



PUMP PRESSURE
OFF 11**8**.5 PSI

Press



PUMP PRESSURE
OFF 11**9**.5 PSI

Press



PUMP PRESSURE
OFF 119.**5** PSI

Press



PUMP PRESSURE
OFF 119.5 PSI

Press



Next menu item

Press



Up one menu level

**ALTERNATE PUMPS
DISABLE**

Press



**ALTERNATE PUMPS
DISABLE**

Press



**ALTERNATE PUMPS
ENABLE**

Press



**ALTERNATE PUMPS
ENABLE**

Press



Next menu item

Press



Up one menu level

Press **SELECT** key to activate data-entry mode. The black cursor block appears indicating the data entry mode. Edit selection values by alternating between the two choices. Pressing the **UP** or **DOWN** key alternates between the choices. Pressing **SELECT** accepts the entire selection as the new setting for the menu item.

Pressing **MENU** key during data entry, (i.e. Black Cursor Block appears), cancels the changes made and returns the controller to the non-data entry mode, (i.e. Black Cursor Block disappears).