



Smart Pump Control Panel-Quick Start Guide





Introduction:

This manual has the basic quick start information to help you operate your smart pump control panel (PMP-1) from CTi Smart Systems.

Enclosure Parts:

The outside parts of the panel enclosure are shown in figures 1.1 and 1.2.



Fig 1.1 Panel Enclosure Parts

- 1- **Alarm light:** In case of pump failure the light will be turned on as an alarm.
- 2- **Antenna:** cellular antenna to make the connection with a cellular tower in order to transmit data.

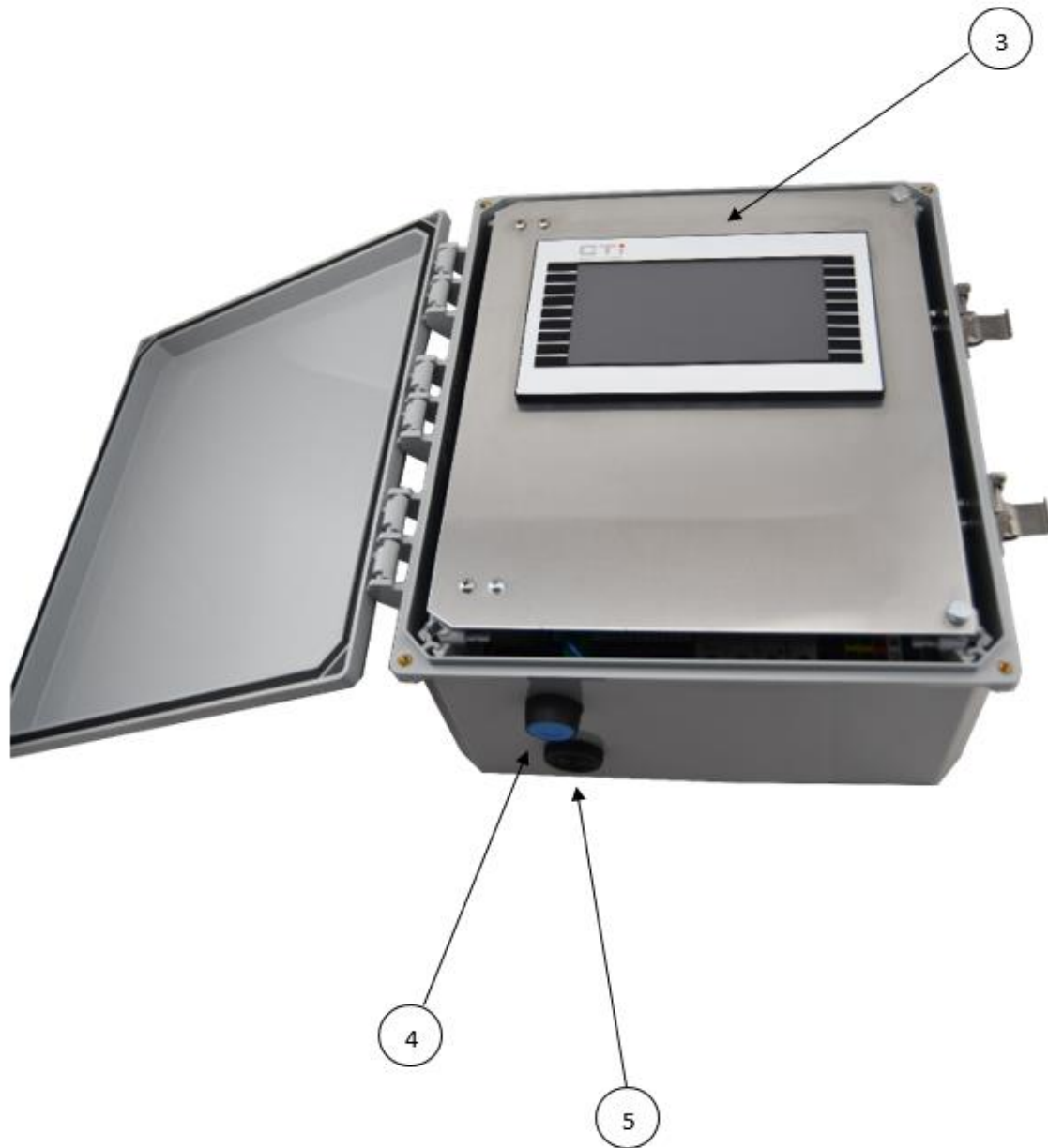


Fig 1.2 Panel Enclosure Parts

- 3- **LCD:** The Liquid crystal display.
- 4- **Buzzer:** The buzzer will be turned on in case of pump failure.
- 5- **Push Button:** used to turn off the buzzer after a failure alarm.



Operation:

The first thing that should be done after installation is the panel setup using its LCD. Figure 1.1 shows the panel LCD. Each screen has its own detailed explanation below.



Fig.2.1 The Panel's LCD.

Boot Screen

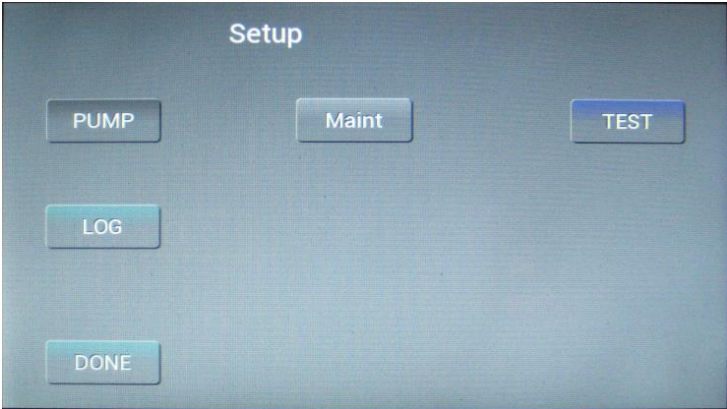
The boot screen will be displayed while the system is doing its first initialization. The progress bar will be displayed and updated while the Display is being initialized.



Setup Screen

The setup screen is the main navigation screen for the system. It has four options which are shown and specified in table 2.1

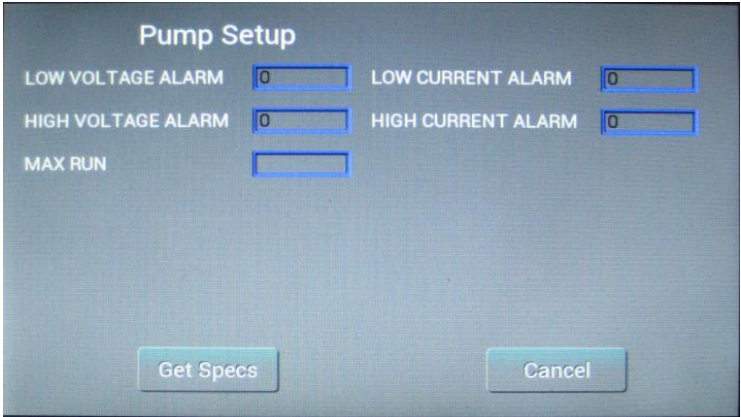
TABLE 2.1: SETUP SCREEN LIST

TEST	used to test the system hardware operation	
PUMP	Enter the pump information and operating parameters	
Maint	Perform system maintenance operations	
Done	Exit to the Main operating screen.	

Pump Screen

This screen is used to enter the pump information. Press any on the data fields to enter the information. When finished entering the pump information press save to update the information. Pressing Cancel will discard any changes. The pump screen, and a detailed explanation for the pump settings are shown in table 2.2.

TABLE 2.2: PUMP SCREEN LIST

Low voltage alarm	Any voltage below this level will be regarded as an error	
High voltage alarm	Any voltage above this level will be regarded as an error	
Low current alarm	Any current below this level while the pump is operating will be regarded as an error.	
High current alarm	Any current above this level while the pump is operating will be regarded as an error	
Max run	This is the maximum time the pump should run to empty the tank.	

Test Screen

This screen is used to test the system hardware during setup or maintenance. The float indicators show the status of the three level sensors. The pump, light and alarm indicators may be pressed to test those functions. Pressing the run button on the module will test the pump but will not update the status indicator on the main display. Table 2.3 shows the test screen with a detailed explanation of each icon use.

TABLE 2.3: SYSTEM MAINTENANCE SCREEN

Float 1	Used to test the first level sensor	
Float 2	Used to test the second level sensor	
Float 3	Used to test the third level sensor	
Alarm	Used to test the failure alarm	
Light	Used to test the failure alarm light	
Pump	Used to test the pump operation	

Maintenance Screen

The maintenance screen is used to perform system maintenance. Calibrate is used when the touch screen needs adjustment. Clear log will clear the message log on the system. This is used to remove clutter on the main screen and will not change the log on the server. The maintenance screen is shown in table 2.4.

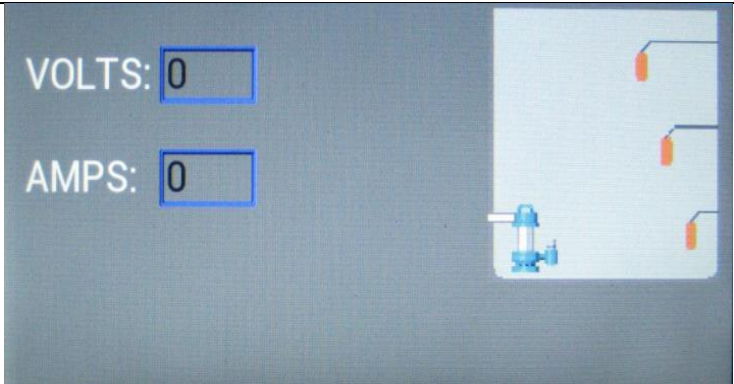
TABLE 2.4: SYSTEM MAINTENANCE SCREEN

Calibrate	Used to adjust the touch screen	
Clear Log	Used to clear the message log on the system	

Main Screen

This is the main operation screen of the system. When the fluid level reaches the second float the pump will turn on. The pump will run until the fluid level is below the first float. Should the fluid level reach the third float the alarm will sound and the light will turn on. Pressing the button on the bottom of the enclosure will silence the alarm. Should the operational voltage or current limits be exceeded the unit will lock and display the lock icon. Table 2.5 shows the main pump screen.

TABLE 2.5: MAIN PUMP SCREEN

Volts	The Operational Voltage	
Amps	The Operational Amper	

Troubleshooting:

Table 3.1 shows the different fault cases, the problem in each case and the possible solutions. The fault messages mentioned in the table will appear as error notifications on the user's cellular device and on the panel screen. In the first four errors cases the pump will restart operation for three times, if the error has not disappeared the pump operation will be locked by the third time.



TABLE 3.1: TROUBLESHOOTING GUIDE.

Fault Message	Problem	Possible solution
High Voltage	The running input voltage is higher than the permissible voltage.	Contact the power utility.
Low Voltage	The running input voltage is lower than the permissible voltage.	Contact the Power Utility.
High Current	The running pump current is higher than the permissible current	Check the pump
Low Current	The running pump current is lower than the permissible current	Check the pump
Pump locked	The Pump locked because one of the previously mentioned errors kept happening.	Try the previously mentioned possible solutions.
Max. Fluid Level	The water level reached the third sensor, which means that the pump isn't working for some reason.	Check the pump or the previously mentioned cases in case of having the pump locked too. To stop the alarm press on the push button on the bottom of the panel.