



USER MANUAL for

Tank and Flow Monitoring System

MAN1361-00_TankMon_UM

DRAFT

PREFACE

This manual explains how to use the Tank and Flow Monitoring System.

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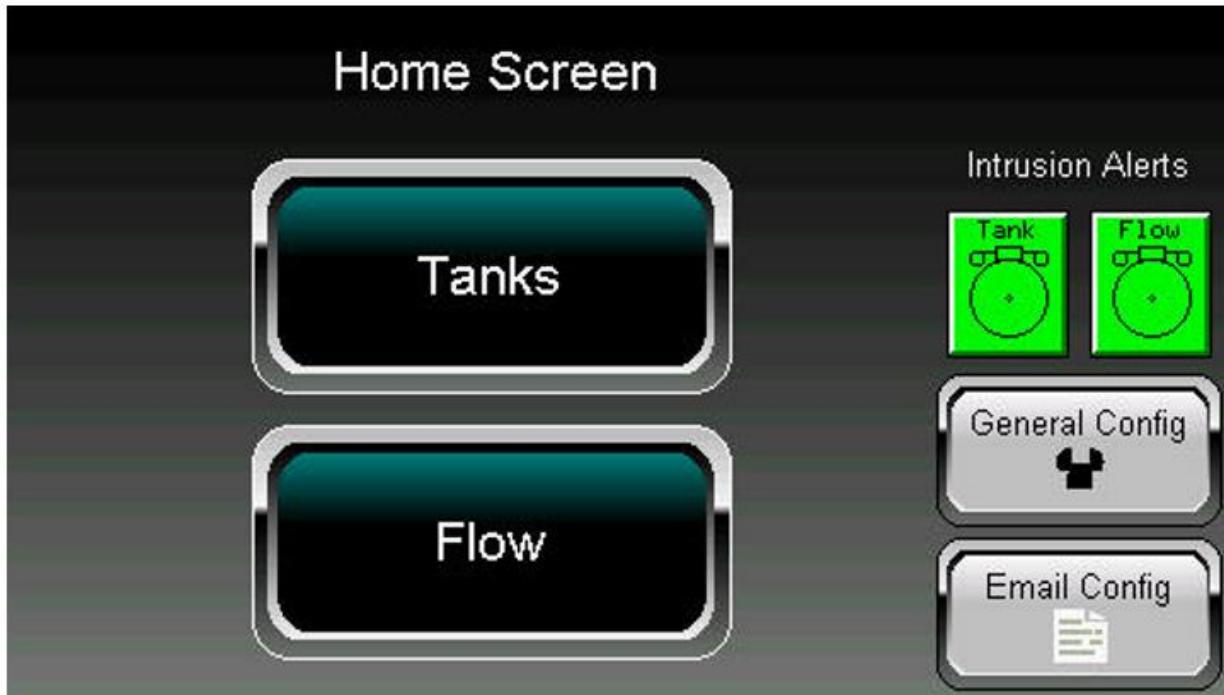
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Section 1 Overview

This program has two main screens: the tank level screen and the flow information. The home screen leads to both of those and to some generic configuration. Each one of the main screens have their specific configuration screen as well. To access any of the configuration screens the user is required to go through a password screen. The password in question can be set up on the general configuration screen and the default password is 0 (zero).

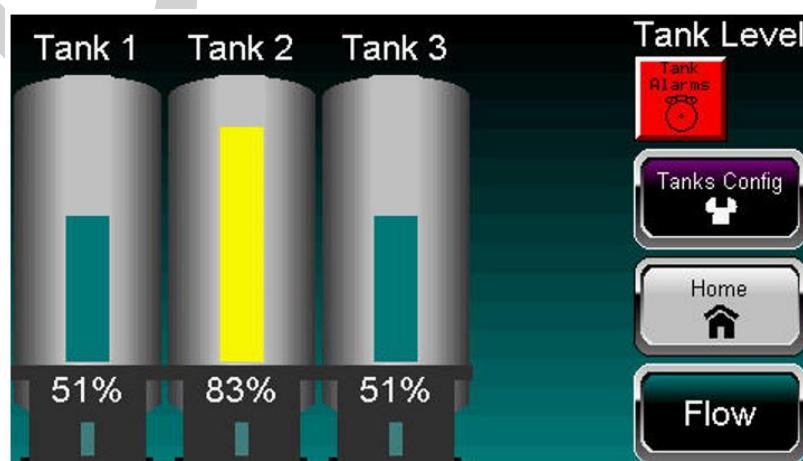
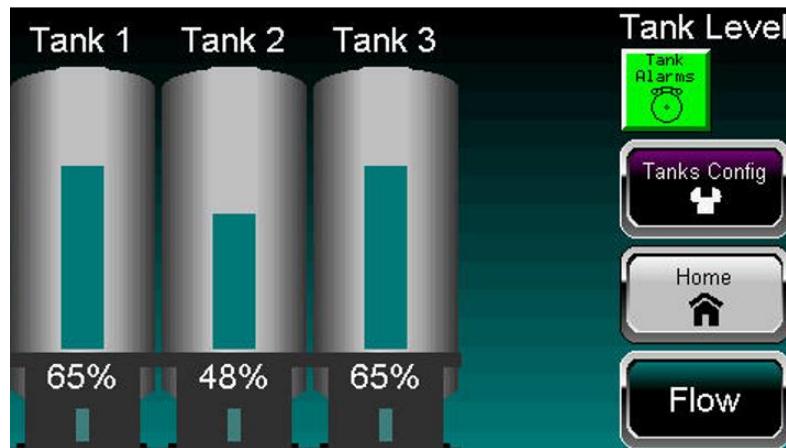
Section 2 Home Screen

The home screen is the screen the controller starts on. The two large “Tanks” and “Flow” buttons at the middle lead to the tank level screen and flow information screen respectively. The two buttons, “Tank” and “Flow”, below intrusion alerts at the right side of the screen are used to manage the tank and flow intrusion alarms respectively. The “General Config” button below them leads to the general configuration screen, and the “Email Config” button at the bottom right leads to the email configuration screen.



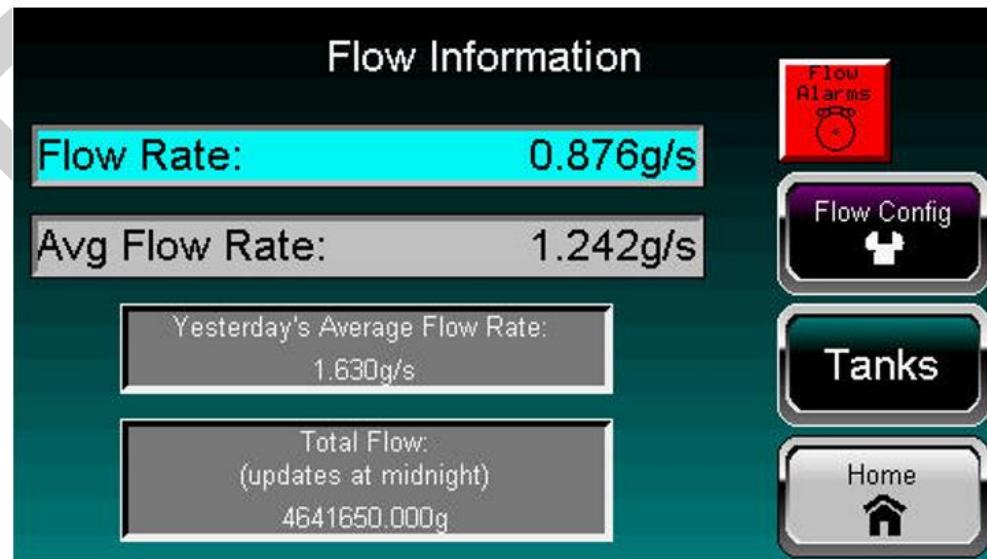
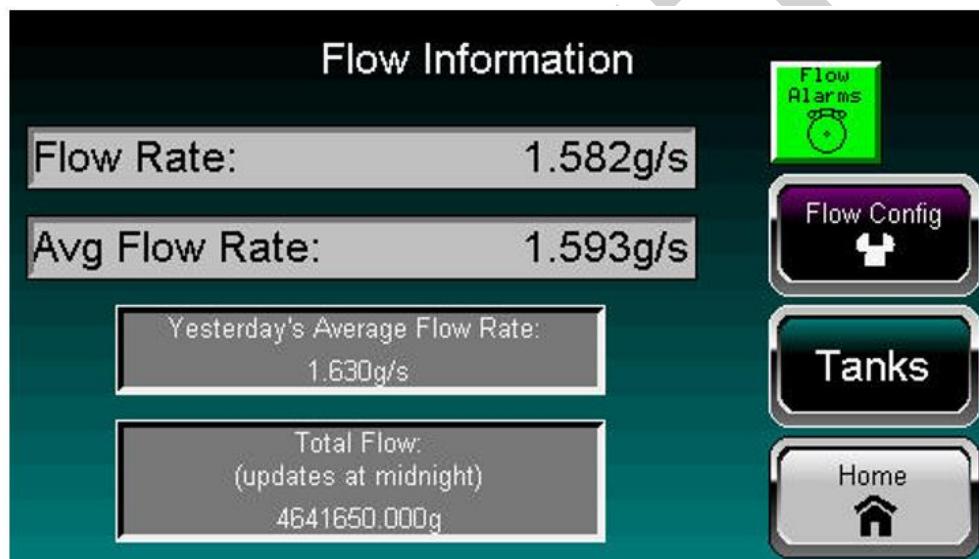
Section 3 Tank Level Screen

The tank level screen shows the level of up to 4 tanks. The level of each tank is shown by a colored bar in the middle of each tank, as well as by a percentage value below each tank. The “Tank Alarms” button on the right side of the screen is used to manage all the tank alarms except for intrusion. The purple “Tanks Config” button below it leads to the tank configuration screen. The “Home” button leads to the home screen and the “Flow” button below it leads to the flow information screen.



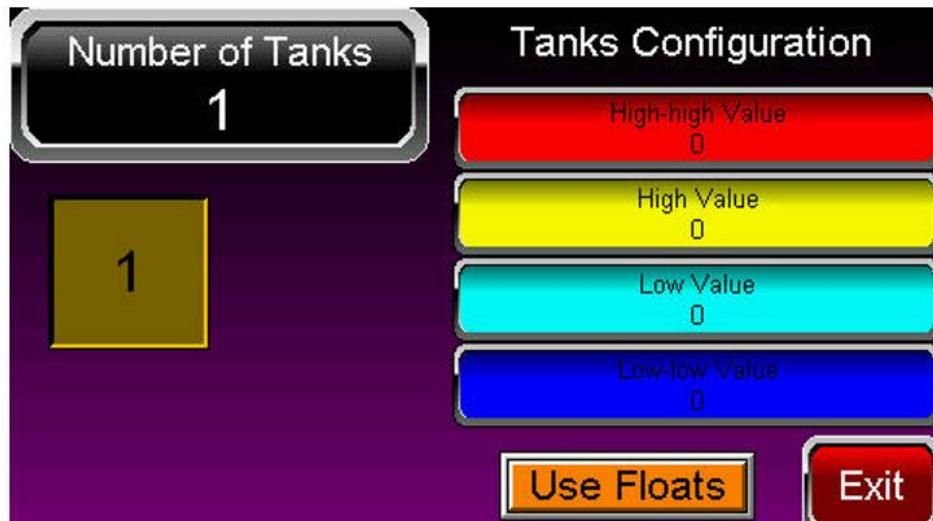
Section 4 Flow Information Screen

The flow information screen shows the current flow rate, in gallons per second, slightly above the center of the screen. The average flow rate, resetting at midnight, also in gallons per second, is shown right below it. Yesterday's average flow rate, below it, is the value of the average flow rate from the previous day that was copied to it, at midnight, when the reset happened. At the bottom center of the screen the total flow that went through the flow meter since it was last reset is shown, in gallons, and is updated only at midnight. The "Flow Alarms" button, at the top right, is used to manage all the flow alarms except for intrusion. The purple "Flow Config" button below it leads to the flow configuration screen. The "Tanks" button below it leads to the tank level screen, and the "Home" button at the bottom right leads to the home screen.



Section 5 Tank Configuration Screen

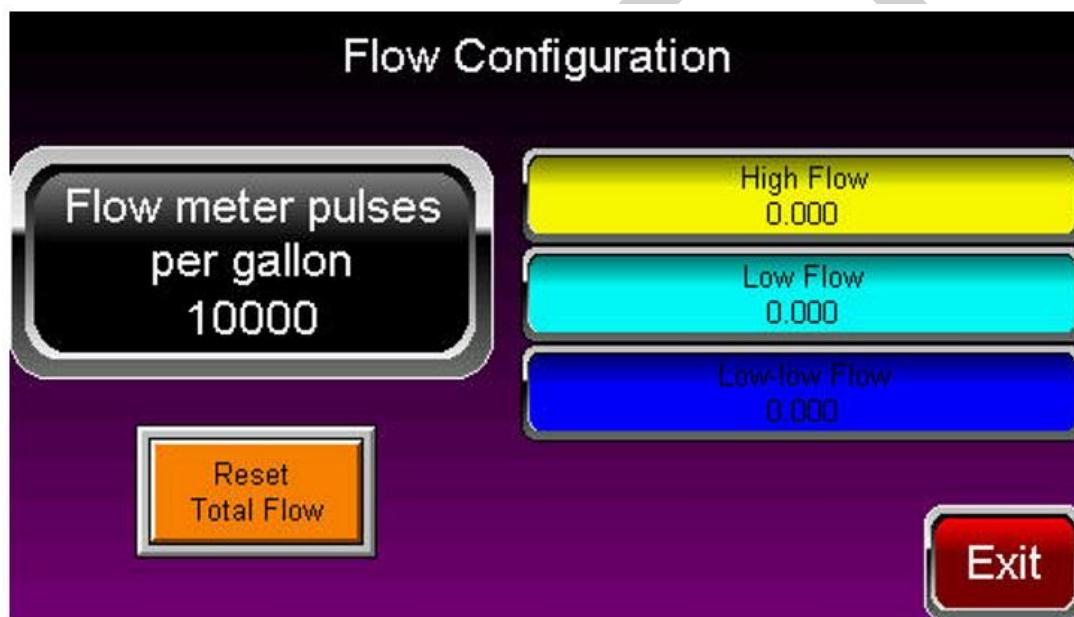
The tank configuration screen is where the user configures how many tanks to use, as well as all the alarm values for each tank. There is a black button that shows the number of tanks to be used in the top left. The number can be changed from 1 to 4, and a yellow button used to select each tank will show up below it depending on the number configured. The red exit button on the bottom right leads back to the tank level screen. The rest of the configurations on this screen apply only to the selected tank.



The red “High-High Value” button on the top right is used to set the value of the alarm with the highest value in the tank. If the tank level is greater than that value for one minute, it will trigger the high-high alarm. The yellow “High Value” button below it is used to set the value of the alarm with the second highest value in the tank. If the tank level is greater than that value for one minute, it will trigger the high alarm. The light blue “Low Value” button below it is used to set the value of the alarm with the second lowest value in the tank. If the tank level is less than that value for one minute, it will trigger the low alarm. The blue “Low-low Value” button below it is used to set the value of the alarm with the lowest value in the tank. If the tank level is less than that value for one minute, it will trigger the low-low alarm.

Section 6 Flow Configuration Screen

The flow configuration screen is where the user configures the pulses according to the flow meter being used, as well as all the alarm values for the flow. There is a black button on the top left that is used to set the pulses per gallon of the flow meter being used. Below it, there is an orange button used to reset the total flow count of the flow meter on the flow information screen. On the right side of the screen, the yellow button, "High Flow", is used to set the value of the alarm with the highest value of flow. If the flow is greater than that value for one minute, it will trigger the high alarm. The light blue button, "Low Value", below it, is used to set the value of the alarm with the seconds lowest value of flow. If the flow is less than that value for one minute, it will trigger the low alarm. The blue button, "Low-low Value", below it, is used to set the value of the alarm with the lowest value of flow. If the flow is less than that value for one minute, it will trigger the low-low alarm. The red exit button on the bottom right leads back to the flow information screen.



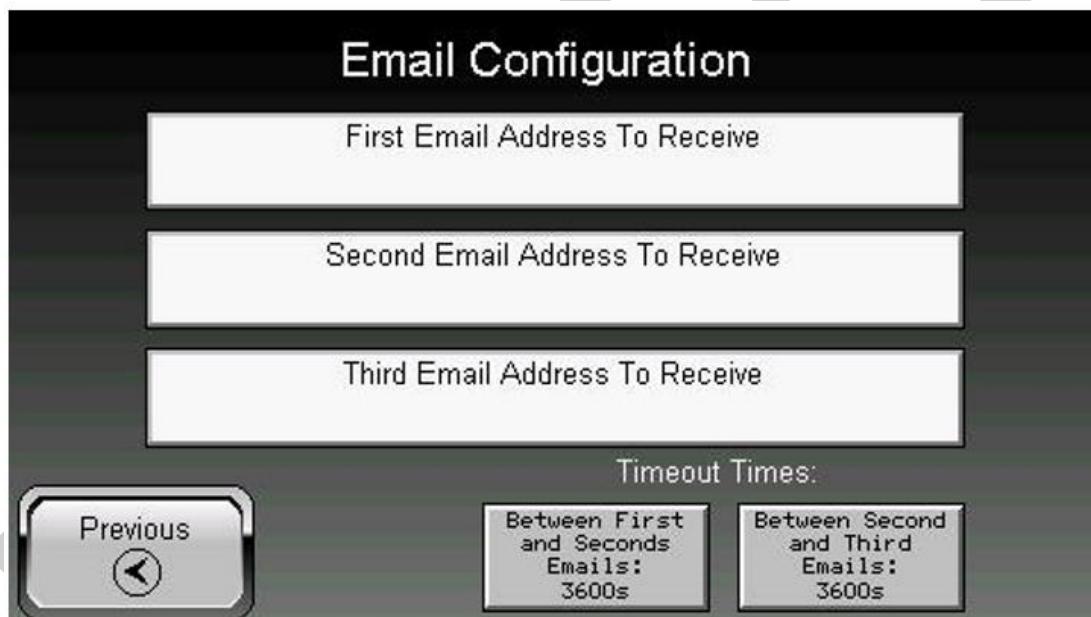
Section 7 Email Configuration Screens

There are two email configuration screens. The first one is where the user can configure the email address that the OCS will use to send the alarm emails. The second one is where the user can configure the email addresses to send the alarm emails to.

The first email configuration screen has a white button, “Email Address”, at the top of the screen. It shows the current email address for the OCS and can be used to change it. The grey button to the right of it, “Copy Email to Username”, is used to copy whatever is in the “Email Address” button to the “Account Username” button at the bottom center of the screen. The white “Account Username” button and “Account Password” button below it, are used to configure the account information of the email address’ account with the username and password respectively. The “DNS IP Address” button on the left is used to configure the domain name server the user would like to use. The “SMTP Server” and “SMPT Port” buttons to the right of it are used to configure the SMTP information for the email address the OCS will use to send its emails. The red, “Return”, button on the bottom left leads back to the home screen, and the gray, “Next”, button on the bottom right leads to the second email configuration screen.

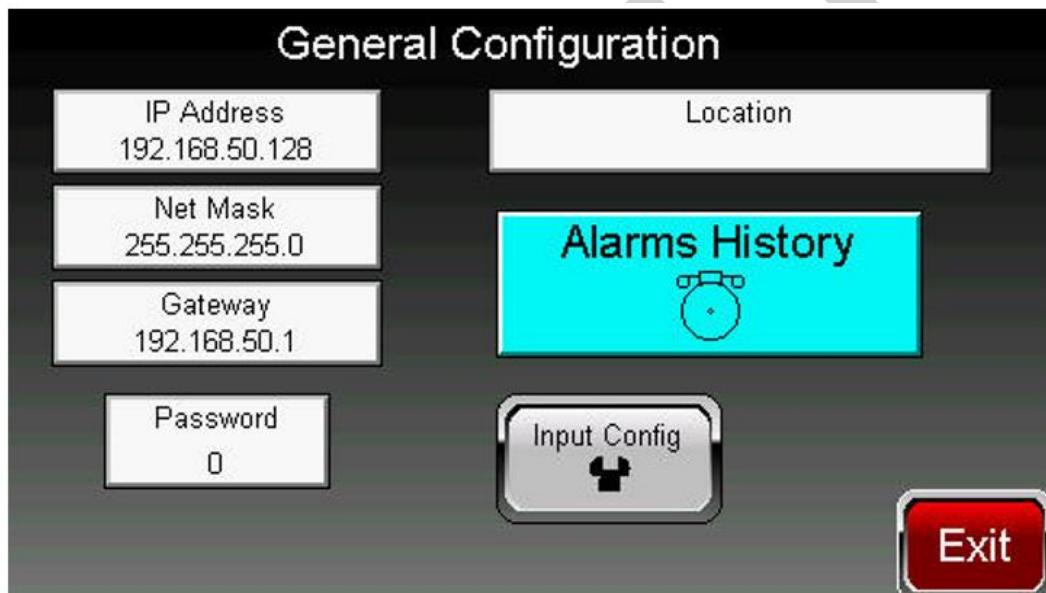


The second email configuration screen has a white button, “First Email Address To Receive” at the top of the screen. It shows the current first email address set to receive the alarm emails. The white button below it, “Second Email Address To Receive”, shows the current second email address set to receive the alarm emails. The last white button, “Third Email Address To Receive”, shows the current third email address set to receive the alarm emails. Once an alarm is triggered, the first email address configured here will receive an email. If no one acknowledges the alarm after a set amount of time, the same email is sent to the second email address. Again, if no one acknowledges the alarm after another set amount of time, the email is sent to the third email address. The timeout times between these emails are configured on the two gray buttons at the bottom of the screen, below “Timeout Times”. The button “Between First and Second Emails:”, shows the time in seconds the controller will wait for somebody to acknowledge the alarms after the first email is sent, before sending the second one. It can also be used to set a new number of seconds. The button “Between Second and Third Emails:”, to the right, shows the time in seconds the controller will wait for somebody to acknowledge the alarms after the second email is sent, before sending the third one. The gray button, “Previous”, at the bottom left, leads back to the first email configuration screen.



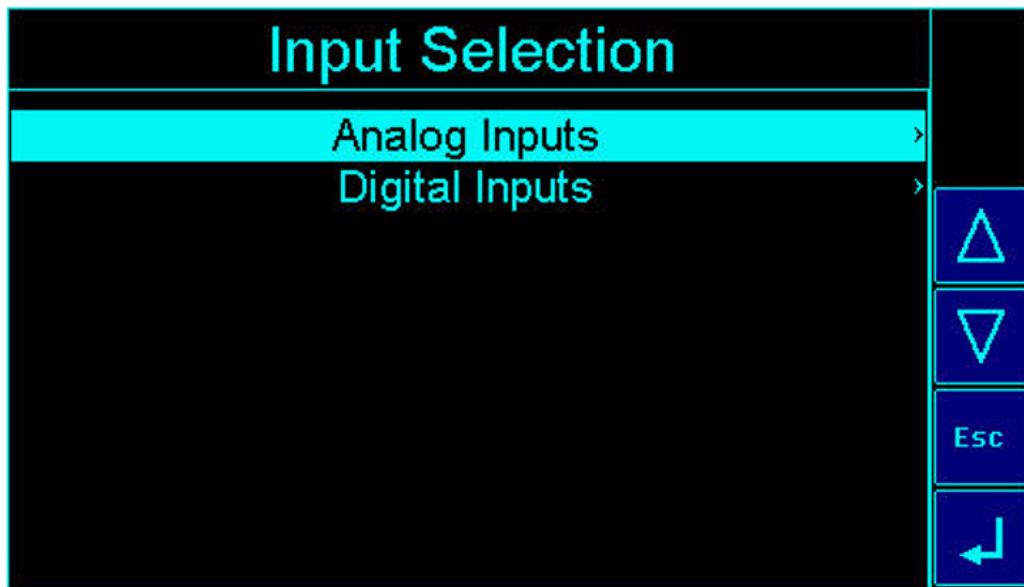
Section 8 Generation Configuration Screen

The general configuration screen is where the user configures the information that isn't specific to the tank, flow, or emails. The three white buttons on the top left part of the screen, "IP Address", "Net Mask", and "Gateway" are used to configure the IP address, netmask and gateway of the controller respectively. The white button, "Password" below them, is used to configure the password that is required to access all the configuration screens. The default password is 0 (zero). The white button, "Location", on the top right, is used to set the physical location of the controller. This information is only used to add it to the alarm emails sent by the program. The colored button on the center of the screen, "Alarms History", is used to view the history of the alarms triggered so far. The "Input Config" button below it leads to the input selection menu, and the red "Exit" button on the bottom right leads back to the home screen.

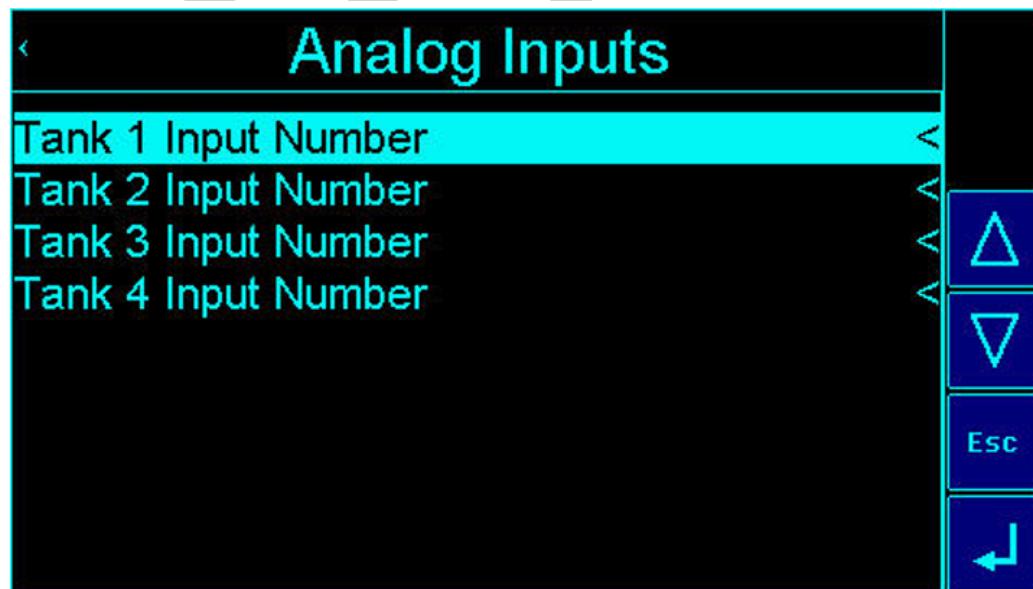


Section 9 Input Selection Menu

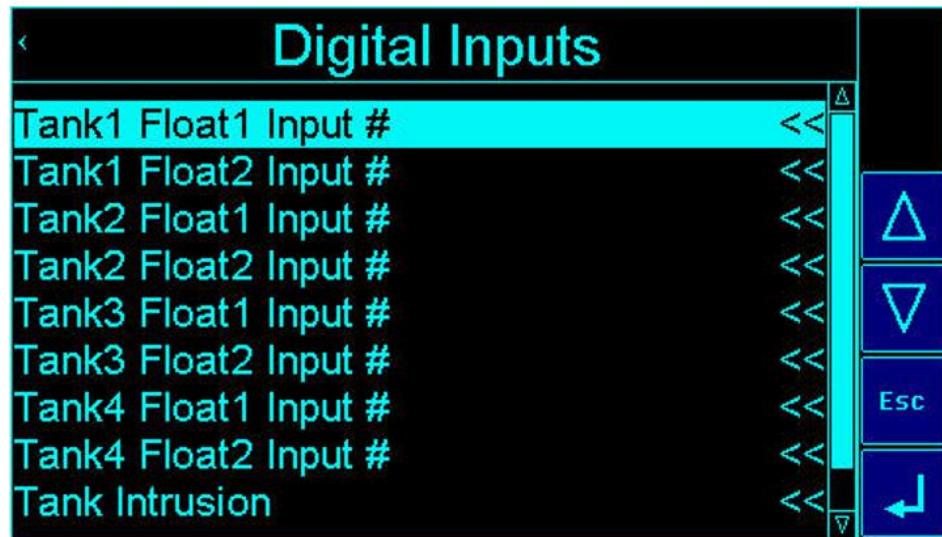
The input selection menu is where the user configures which physical input of the controller receives each of the tanks, floats and intrusion alarms. The menu is divided into two main sections, the analog inputs and the digital inputs.



By selecting the analog inputs, the menu displays all the analog input options. The user can select one of the options and enter a number from 1 to 4. This number should be the same input number from where the user wired the analog input they are trying to configure.



By selecting the other option, the digital inputs, the menu displays all the digital input options. The user can select one of the options and enter a number from 1 to 11. This number should be the same input number from where the user wired the digital input they are trying to configure. The flow should always be wired to the 12th digital input since there is no configuration for that specific input.



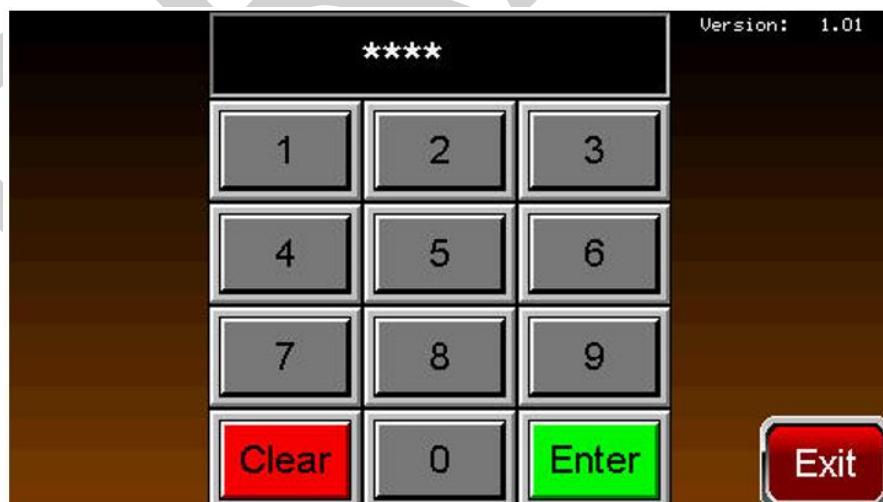
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Section 10 Password Screen

The password screen is where the controller goes every time the user tries to access a configuration screen. There is a keypad on the middle of the screen with buttons for the digits 0 through 9, as well as a “Clear” red button and an “Enter” green button. The red “Exit” button on the bottom right leads back to the screen the controller was before it went into the password screen. At the top of the screen there is a black field. Before any key is pressed, it says “Enter Password” in white.



After any of the number keys are pressed, it will contain an asterisk. One for each key pressed. If the “Clear” button is pressed, the current password typed will be erased and the “Enter Password” message will reappear. Once the password typed matches the currently set password, the user can click the “Enter” button to get through the password screen to whichever configuration they were trying to access.

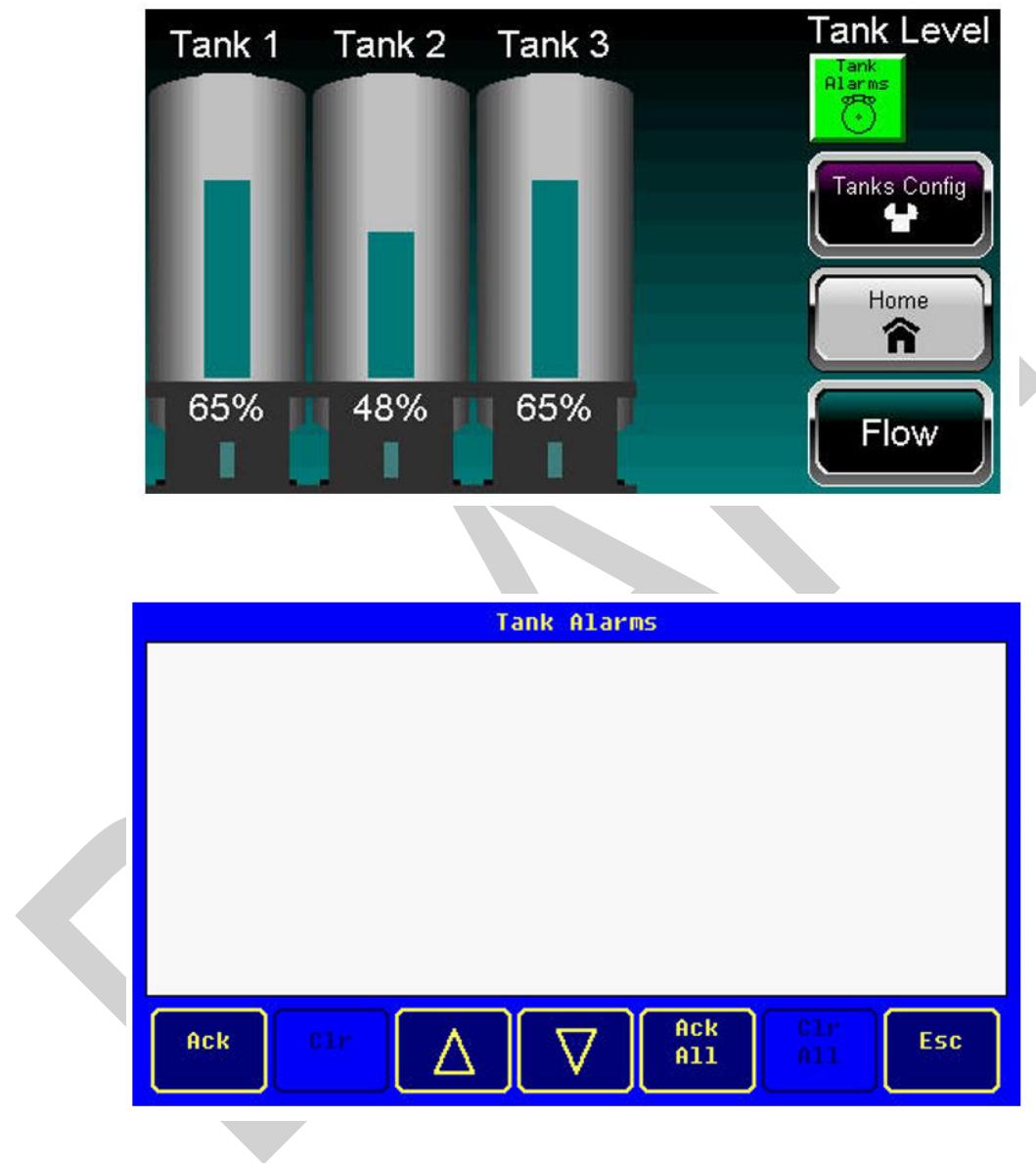


If the current password typed is not the same as the currently set password when the “Enter” button is pressed, the current password typed will be erased and the message “Invalid Password” will appear in red on the black field at the top of the screen. The currently set password can be seen and changed on the general configuration screen, and the default password is 0 (zero).

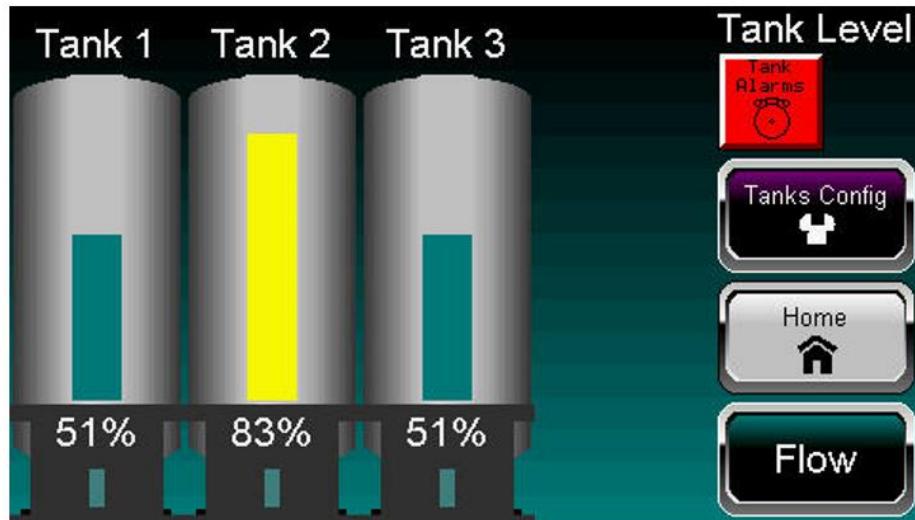


Section 11 Alarm Management

All the alarm buttons in the program behave similarly except to the “Alarms History” button on the general configuration screen. They will be green if no alarm was triggered. If the user clicks on a green alarm button an empty menu will pop up.



When an alarm in their alarm group is triggered, they will turn red.



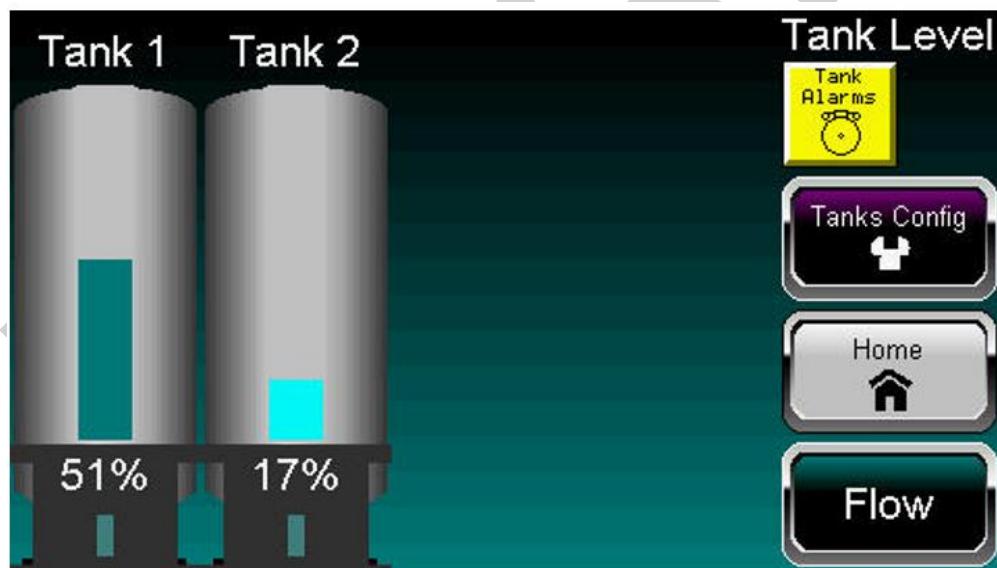
If the user clicks on a red alarm button, a message for that specific alarm will be on the menu that will pop up. If the message is red, the issue that triggered that alarm has not been fixed.



If the message is green, it has already been fixed.



If the user exits the menu without acknowledging the alarms, the button will still be red. If the user acknowledges all the alarms, but the issues were not fixed yet, the button will turn yellow, and the alarm messages in the menu will be blue.





If the acknowledged alarm's issues are fixed, the button will automatically turn green. If the issues were already fixed when the alarms are acknowledged, the button will turn green, and the messages will be erased.

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