

SiMarine Set-up and Tank Calibration

Rev A: 6/30/22

Document Release Date: 6.30.22

Summary:	1
Pico Display Set up	1
Pico Tank Calibration	2
Set the Fresh water Tank Full Value	2
Set the Fresh water tank Empty Value	3
Set the Black Water Tank Full Value	3
Set the "Nearing Fill Black Water Tank" Value	4
Set The Empty Waste Water Tank Volume	4

Summary:

This document specifies the proper settings and procedure for setting up the pico controller for the SiMarine setup present in Ford Model D, version 2.0 Cabana Vans.

Pico Display Set up

Note: If prompted for a password the default password is: 123412

1. Hold the circle button on the bottom right of the screen to get into the settings.
2. Navigate to “General Settings” → “Screen” and input “Min. Brightness” of 1%
3. Navigate to “Devices” → “Batteries” and select “Add new”
 - a. Select “Name” and name the battery “Cabin Battery”
 - i. Note, you must exit the screen and re enter after adding the battery in order to rename it.
 - b. Select “Type” and Select “LiFePO4”
 - c. Select “Capacity C20” and input “412”
 - d. Select “Capacity C10” and input “412”
 - e. Select “Capacity C5” and input “412”
 - f. Select “Voltmeter” and select “Pico Internal”
 - g. Select “Ammeters” and “add new”, Select the “SC303”
 - h. Select “Range” and select “200”
4. Navigate to “Devices” → “Tanks” and select “Add New”
 - a. Select “Name” and name the tank “Fresh Water”
 - b. Select “Sensor Type and select “Voltage”
 - c. Select “Sensor” and select “ST107[3909]2”
 - i. Note depending on wiring you may need to select ST107[3909]1, ST107[3909]2, or ST107[3909]3
 - d. Select “Capacity” and input “42” gal
 - i. Note Tank Calibration will happen later in this document.
5. Navigate to “Devices” → “Tanks” and select “Add New”
 - a. Select “Name” and name the tank “Waste Water”
 - b. Select “Type” and select “Waste Water”
 - c. Select “Sensor Type and select “Voltage”
 - d. Select “Sensor” and select “ST107[3909]1”
 - i. Note depending on wiring you may need to select ST107[3909]1, ST107[3909]2, or ST107[3909]3
 - e. Select “Capacity” and input “47” gal
 - i. Note Tank Calibration will happen later in this document.

6. Navigate to “Date & Time” and input the correct date and time
7. Navigate to “Service” and select “Settings Locked” and select “On”
 - a. This will set the default password to 123412

Pico Tank Calibration

Note: the order of the below operation is important as it will set the full values at a level that allows our cleaning team to use a small amount of water from the van without showing any decrease in fresh water fill level or rise on the black water tank. DO NOT calibrate any points either tank before any water has passed through it as this will not be representative of the user experience.

1. Set the Fresh water Tank Full Value

- a. Fill the fresh water tank until full. Full will start pouring water out the air purge or the water fill port.
- b. Now Drain 1 gallon from the system through the kitchen sink.
- c. Hold the circle button on the bottom right of the screen to get into the settings.
- d. Navigate to “Devices” →”Tanks”--> “Fresh Water” and scroll down to calibration point
- e. Select “Add new” and define the capacity of the point as the total tank volume (42 gallons) accept this addition by clicking the circle(meaning ok or select) and then select measured value.
- f. Confirm the voltage showing under measured is somewhere between 3-5volts and accept it by pressing the circle.
- g. Then accept the overall entry by pressing and holding the circle
- h. You have now set 1/5 necessary calibration points.

2. Set the Fresh water tank Empty Value

- a. Drain the fresh water tank. This is a good opportunity to check the flow rates and drain rates on all water ports, shower & toilet. It is also a good opportunity to verify that hot water works as documented in the elwell set up documentation.
- b. Once the fresh water tank is empty enough that the kitchen sink cannot maintain flow and the show flow rate goes to a drip set the empty calibration point by:
 - i. Hold the circle button on the bottom right of the screen to get into the settings.

- ii. Navigate to “Devices” →”Tanks”--> “Fresh Water” and scroll down to calibration point
- iii. Select “Add new” and define the capacity of the point as 0gallons(or empty), then accept this addition by clicking the circle(meaning ok or select) and then select the measured value.
- iv. Confirm the voltage showing under measured is somewhere between 0-2 volts and accept it by pressing the circle.
- v. Then accept the overall entry by pressing and holding the circle
- vi. You have now set 2/5 necessary calibration points.

3. Set the Black Water Tank Full Value

- a. Fill the remainder of the black water tank until the kitchen sink is slow to drain and the water level is equal with the shower floor(easily visible through the toilet)
- b. Through the waste water dump port on the outside of the drivers side van, drain 1 gallon of water.
- c. Hold the circle button on the bottom right of the screen to get into the settings.
- d. Navigate to “Devices” →”Tanks”--> “Waste Water” and scroll down to calibration point
- e. Select “Add new” and define the capacity of the point as the full tank volume (47gallons), then accept this addition by clicking the circle(meaning ok or select) and then select the measured value.
- f. Confirm the voltage showing under measured is somewhere between 3-5 volts and accept it by pressing the circle.
- g. Then accept the overall entry by pressing and holding the circle.
- h. You have now set 3/5 necessary calibration points.

4. Set the “Nearing Fill Black Water Tank” Value

- a. Drain an additional 10 gallons from the black water dump port on the exterior of the van.
- b. Hold the circle button on the bottom right of the screen to get into the settings.
- c. Navigate to “Devices” →”Tanks”--> “Waste Water” and scroll down to calibration point
- d. Select “Add new” and define the capacity of the point as the parietal tank volume (47-11 gallons drained= 36 gallons), then accept this addition by clicking the circle(meaning ok or select) and then select the measured value.
- e. Confirm the voltage showing under measured is somewhere between 2-4 volts and accept it by pressing the circle.
- f. Then accept the overall entry by pressing and holding the circle.
- g. You have now set 4/5 necessary calibration points.

5. Set The Empty Waste Water Tank Volume

- a. Drain the remaining water from the black water dump port on the exterior of the van, until no flow is present through the waste water dump port.
- b. The dump one gallon of water down the kitchen sink, toilet or shower.
- c. Hold the circle button on the bottom right of the screen to get into the settings.
- d. Navigate to “Devices” →”Tanks”--> “Waste Water” and scroll down to calibration point
- e. Select “Add new” and define the capacity of the point as the empty tank, 0 gallons, then accept this addition by clicking the circle(meaning ok or select) and then select the measured value.
- f. Confirm the voltage showing under measured is somewhere between 0-2 volts and accept it by pressing the circle.
- g. Then accept the overall entry by pressing and holding the circle.
- h. You have now set 5/5 necessary calibration points.