

# AccuSine+ PCSn Active Harmonic Filter Firmware Upgrade

03/2020





# Safety Information

## Important information



Read these instructions carefully and look at the equipment to become familiar with the device before trying to install, operate, service or maintain it. The following special messages may appear throughout this bulletin or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.

The addition of either symbol to a “Danger” or “Warning” safety label indicates that an electrical hazard exists which will result in personal injury if the instructions are not followed.

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

### **DANGER**

**DANGER** indicates a hazardous situation which, if not avoided, **will result in death** or serious injury.

### **WARNING**

**WARNING** indicates a hazardous situation which, if not avoided, **could result in death** or serious injury.

### **CAUTION**

**CAUTION** indicates a hazardous situation which, if not avoided, **could result in minor or moderate injury**.

### **NOTICE**

**NOTICE** is used to address practices not related to physical injury.

## Please note

Electrical equipment should be installed, operated, serviced and maintained only by qualified personnel. No responsibility is assumed by Schneider Electric for any consequences arising out of the use of this material.

A qualified person is one who has skills and knowledge related to the construction, installation, and operation of electrical equipment and has received safety training to recognize and avoid the hazards involved.

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As standards, specifications and designs change from time to time, please ask for confirmation of the information given in this publication.

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# Chapter 1 Safety Precautions

Installation, wiring, testing and service must be performed in accordance with all local and national electrical codes.

## DANGER

### HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices. See NFPA 70E in the USA, CSA Z462, or applicable local standards.
- This equipment must be installed and serviced only by qualified electrical personnel.
- Do not exceed the device's ratings for maximum limits.
- Ground equipment using the ground connecting point provided before turning on any power supplying this device.
- Turn off all power supplying this device and the equipment in which it is installed before working on the device or equipment.
- After removing power, wait for 15 minutes to allow the capacitors to discharge prior to opening the doors or removing covers.
- Always use a properly rated voltage sensing device to confirm power is off.
- Replace all devices, doors, and covers before turning on power to this equipment.
- Carefully inspect the interior for tools left behind before closing and sealing the door.
- Verify the rating of the neutral conductor for each unit in the system is greater than the neutral current limit setting.

**Failure to follow these instructions will result in death or serious injury.**

### Cybersecurity Notice

## WARNING

### POTENTIAL COMPROMISE OF SYSTEM AVAILABILITY, INTEGRITY, AND CONFIDENTIALITY

- Change default passwords to help prevent unauthorized access to device settings and information.
- Disable unused ports/services and default accounts, where possible, to minimize pathways for malicious attacks.
- Place networked devices behind multiple layers of cyber defenses (such as firewalls, network segmentation, and network intrusion detection and protection).
- Use cyber security best practices (for example: least privilege, separation of duties) to help prevent unauthorized exposure, loss, modification of data and logs, interruption of services, or unintended operation.

**Failure to follow these instructions can result in death, serious injury, or equipment damage.**





# Chapter 2 Introduction

## Document Scope

The aim of this document is to provide the users, installers, and the maintenance personnel with the firmware upgrade procedure needed to maintain the AccuSine PCSn.

Read the instructions carefully and become familiar with the device before executing this procedure.

## Overview

This procedure is required to correct the issue of the clock which is not displaying the year correctly. This is a noncritical issue which has no impact on the performance of the AccuSine PCSn.

**NOTE:** The active filter system must be shutdown to complete this upgrade procedure. If the active filter system is critical to the operation, perform this procedure during the scheduled preventative maintenance when the loads being corrected are shutdown.

The parameter settings that are applied during the commissioning of the unit and any other specific parameter changes will be retained during this procedure except for the ADMIN password. The ADMIN password will be changed. If the unit is setup with a Static IP address for Modbus communication by TCP/IP, the Static IP address will be lost. Refer "Appendix A: Obtain Static IP Address" on page 33 and "Appendix B: Enter Static IP Address" on page 37 procedure to retrieve and to enter the static IP address which are described in the appendixes of this document.

## Pre-requisites

- Computer with internet access and Windows 7 or later installed.
- USB A and USB B cable of length  $\geq 2$  m.



- USB flash drive with capacity  $> 50$  MB and  $< 4$  GB.
- Active Filter Update Tool file.
- Latest version of HMI Update file for AccuSine PCSn<sup>1</sup>.
- AccuSine PCSn firmware update procedure document.

<sup>1</sup> As of 03/2020, the latest HMI Update file version for AccuSine PCSn is v002.001.006.



# Chapter 3 Firmware Update

## Install Active Filter Update Program

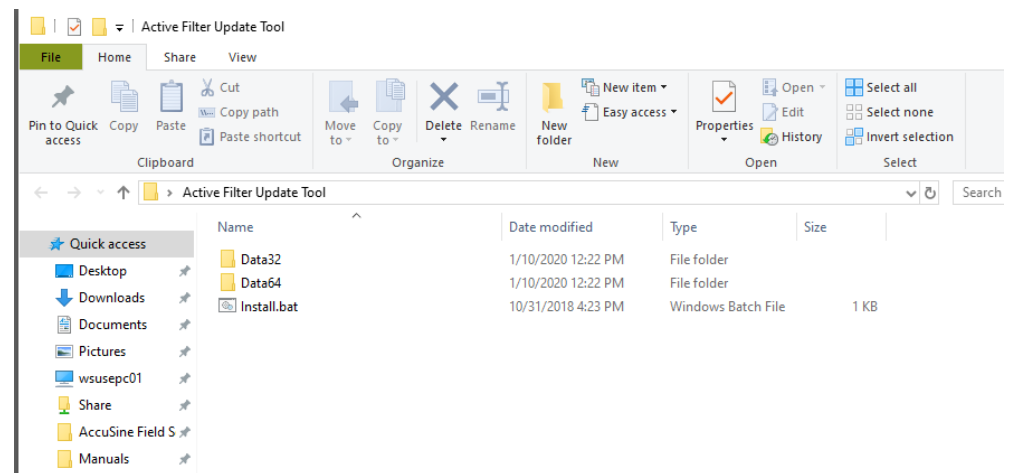
### Pre-requisite

Verify that the computer has internet access. If the internet access is not available, contact the local Schneider Electric representative for an alternate means to obtain the files.

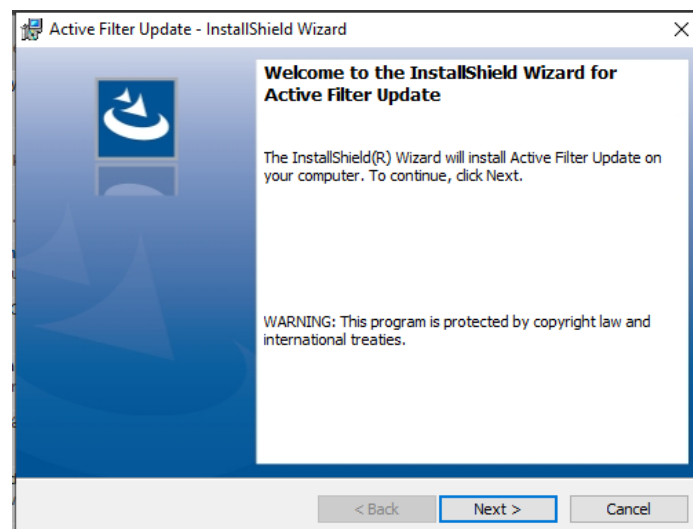
### Installation Procedure

Follow the below steps to install the Active filter Update program on your computer:

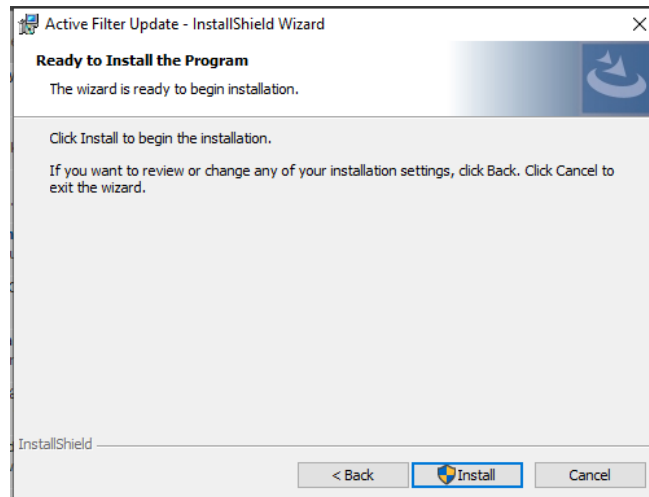
1. Open Active Filter Update Tool folder.
2. Double-click the Install.bat file.



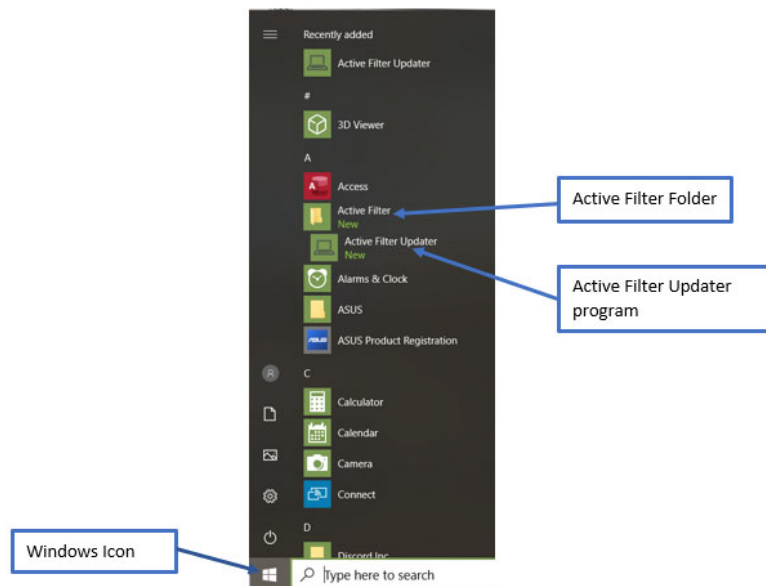
3. Select Next.



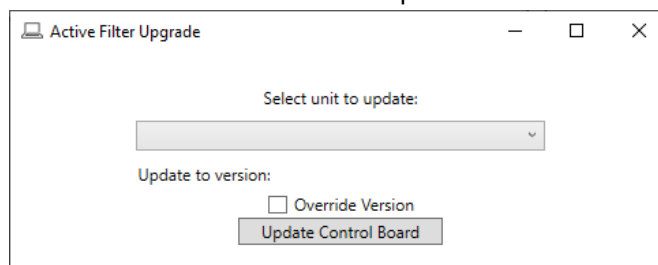
4. Select Install to start the installation.



5. Confirm if you want to allow the program to make changes to the device. Select Yes.
6. Click the Windows icon and ensure that the Active Filter Update program is present in the application list.
7. Open the new Active Filter Updater program.



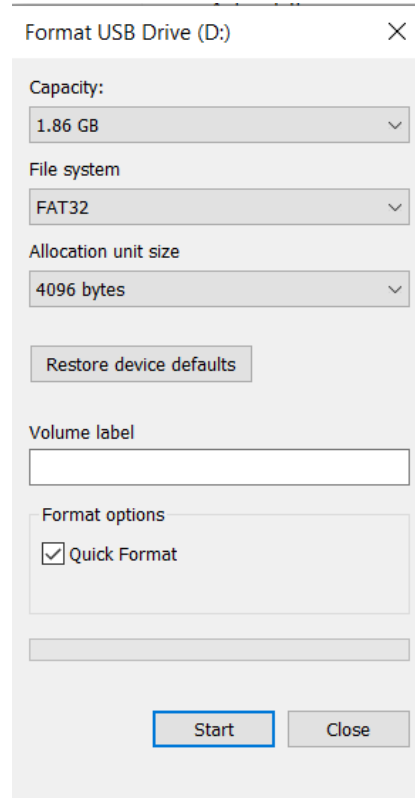
Select unit to update drop-down will be blank until the computer is connected to a unit by the USB cable and the USB service port is enabled from the HMI unit.



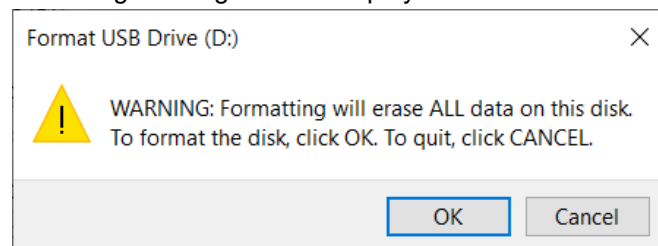
## Load HMI Update Program onto USB Flash Drive

Follow the below steps to load the HMI Update program onto USB flash drive:

1. Ensure that the HMI file is the correct file for the unit being updated with the file name prefix HMI\_PCSN.
2. Unzip the extension file zip, which will be easy to find the location of the file on the computer.
3. Insert the USB flash drive into the USB port of the computer.
4. Right-click the USB drive letter in the File Manager program.
5. Click Format.
6. In File system, select FAT32.
7. Select Quick Format under Format options.
8. Press Start.



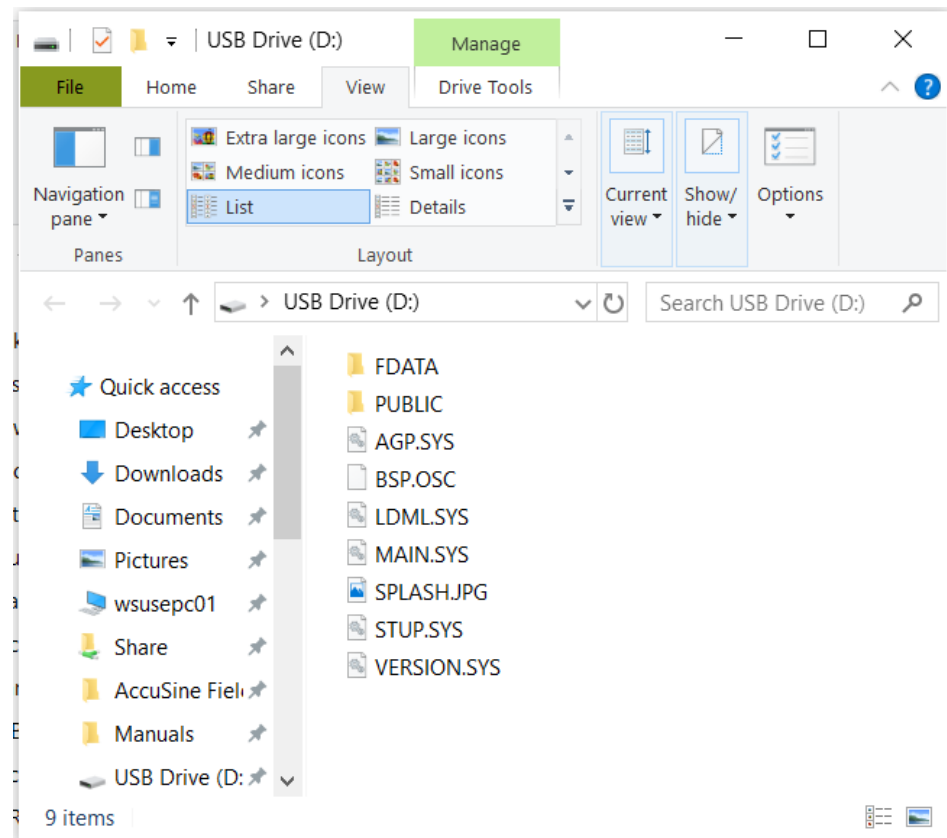
A warning message will be displayed.



9. Select OK.

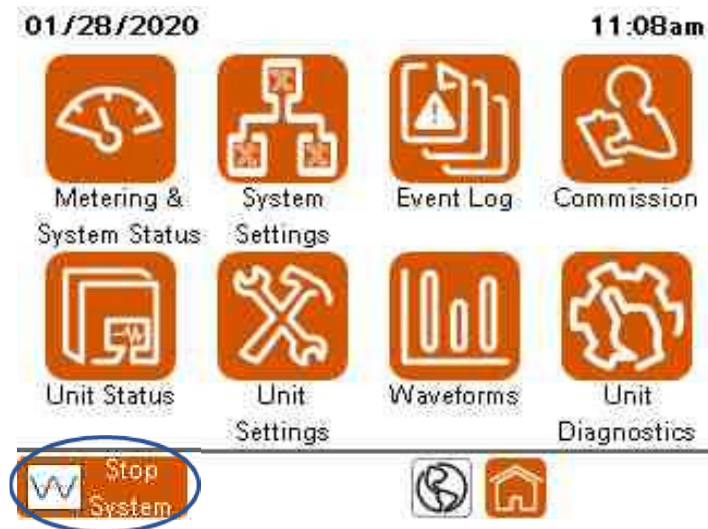
10. Open the USB drive directory from File Manager.
11. Place all the files contained in the HMI update folder to the USB flash drive.

The files must be saved under the flash drive root directory. The below figure shows the folders in the USB flash drive.

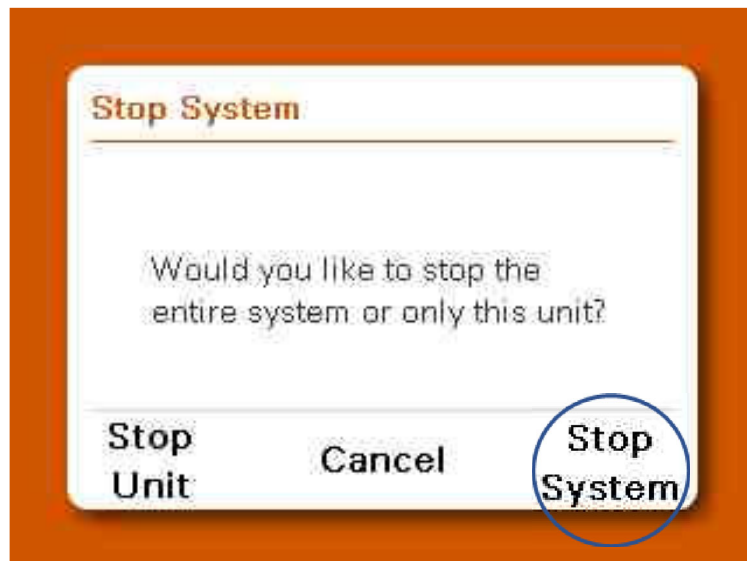


## Enable Service Port

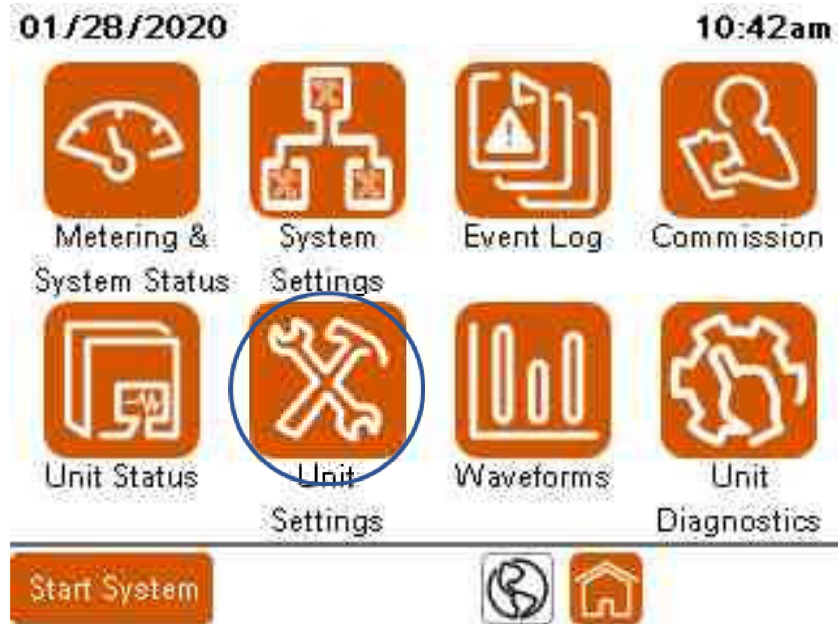
1. Press Stop System icon if there is a running sine wave displayed on the bottom left of the HMI screen. The icon should display the state Start System.



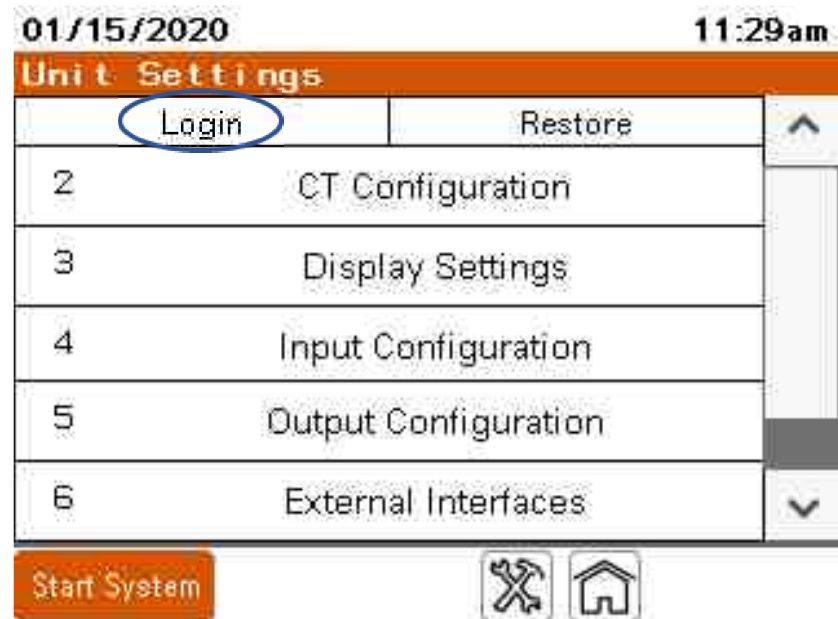
2. If the unit is part of a parallel system, two or more units operating together, press Stop System.



3. Press Unit Settings on the Home screen.



4. Select Login on the Unit Settings screen.



5. Enter the user name and password and press Log In.  
User name: ADMIN  
Password: ADMIN




The User Login screen will display Current user: ADMIN.



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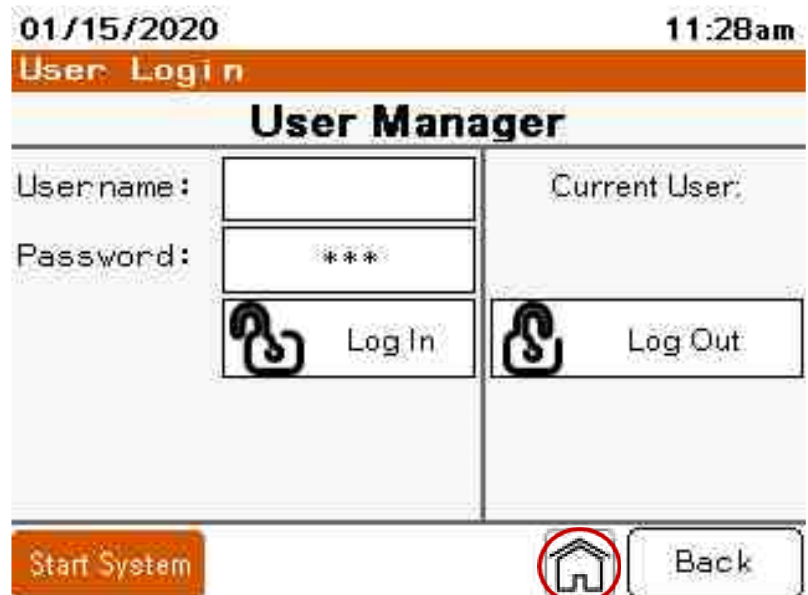
User Login

### User Manager

User name :	<input type="text"/>	Current User: ADMIN
Password :	<input type="password" value="***"/>	
 Log In	 Log Out	
Manage Users	Change Password...	

Start System  Back


6. Press the Home icon at the bottom right of the screen to go back to the Home screen.



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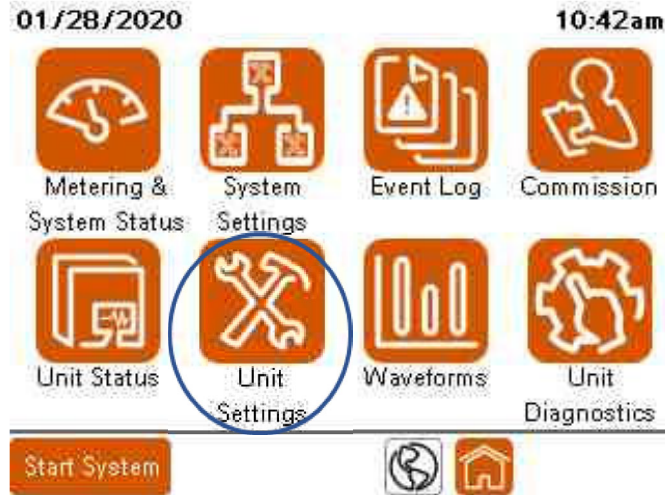
User Login

### User Manager

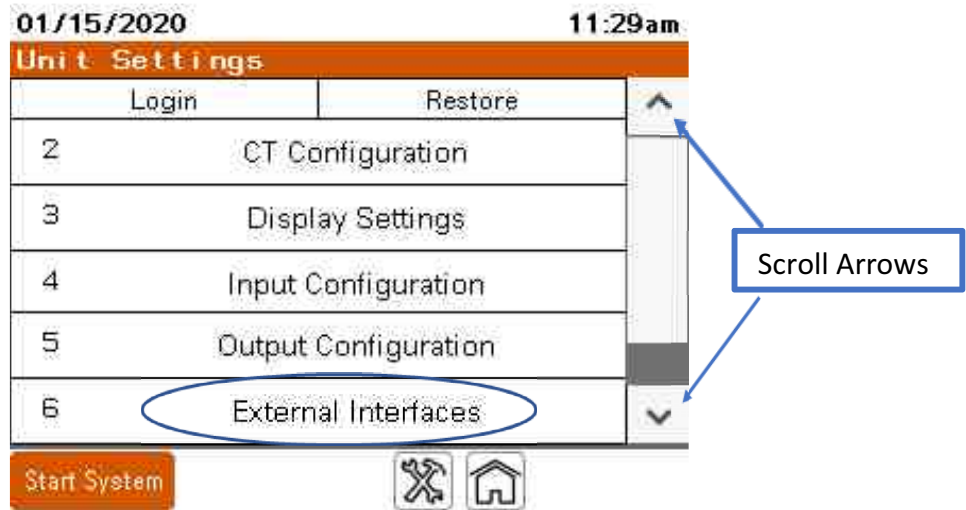
User name :	<input type="text"/>	Current User:
Password :	<input type="password" value="***"/>	
 Log In	 Log Out	

Start System  Back

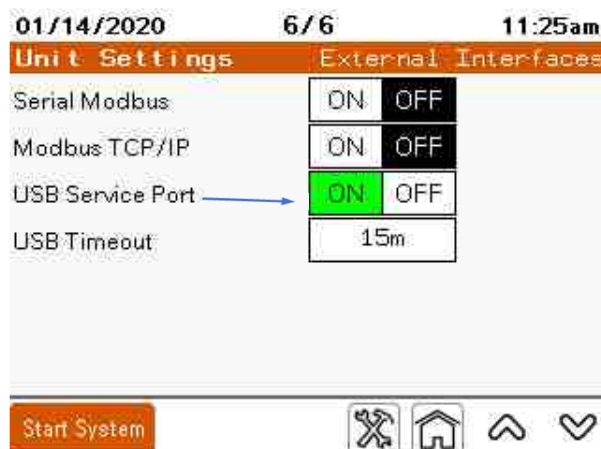
7. Press Unit Settings icon on the Home screen.



8. In the Unit Settings screen, scroll to the bottom of the screen and select 6 External Interfaces.

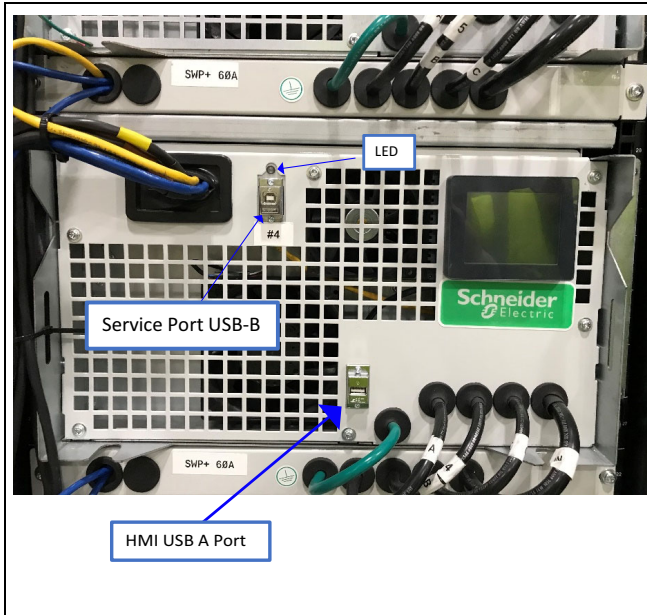


9. Turn ON USB Service Port.

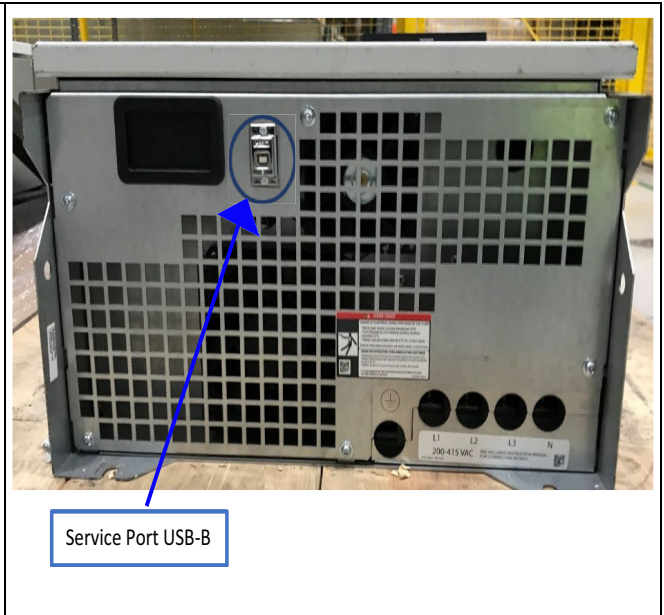


If the Modbus TCP/IP is already ON with a green background, refer to, “Appendices” on page 33 before proceeding.

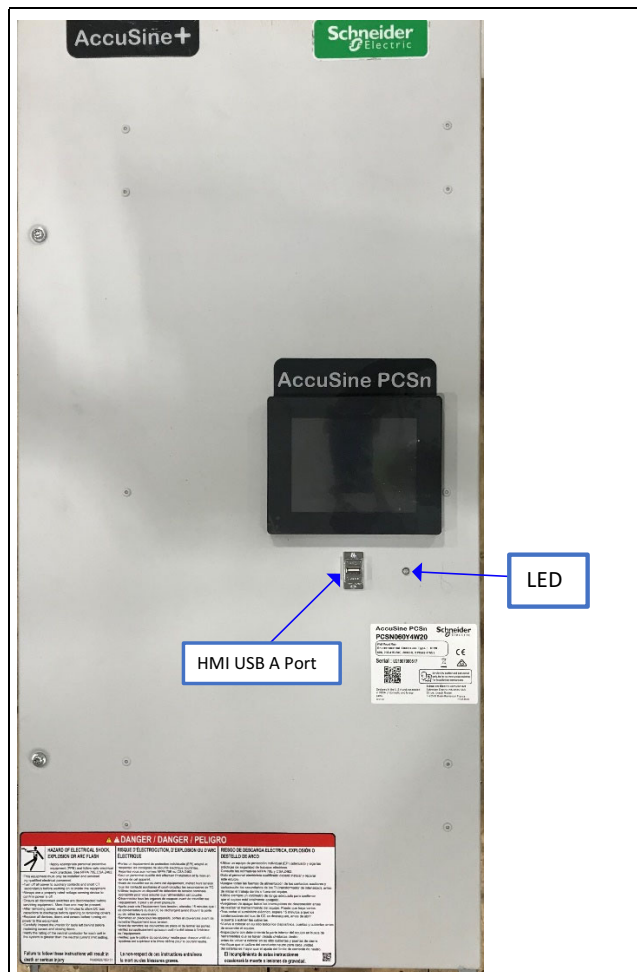
10. Plug the end of the USB B cable into the service port and connect the USB A cable to the computer with Active Filter Upgrade program installed.



AccuSine PCSn Rack Mount Front View



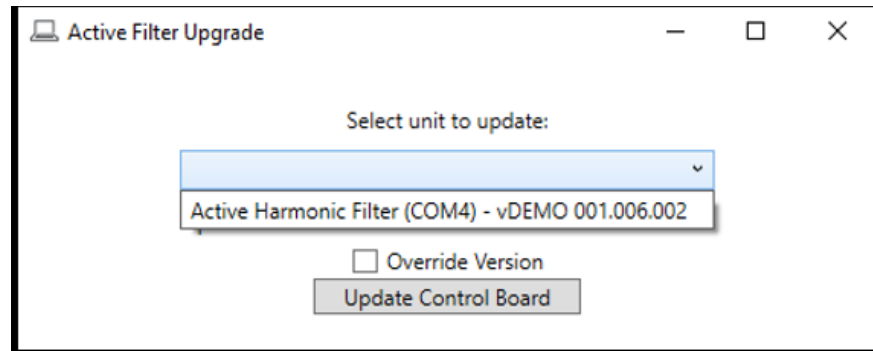
AccuSine PCSn Wall Mount Bottom View.



AccuSine PCSn Wall Mount Front View

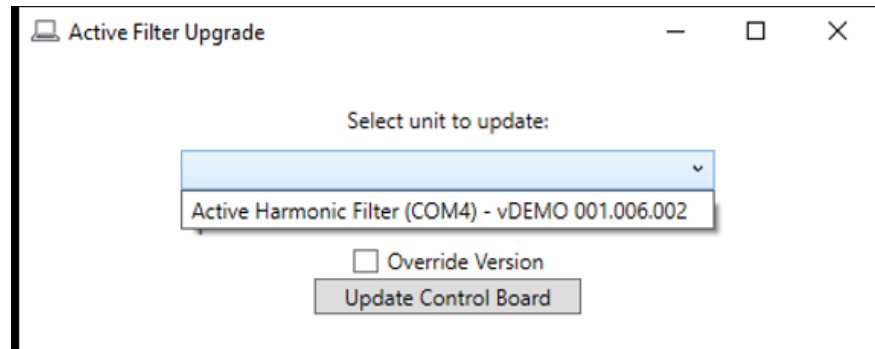
11. Open the Active Filter Upgrade program on the computer if it is not running.
12. The Active Filter Upgrade program should display the active filter and a COM number should be assigned by the operating system of the computer.

**NOTE:** If the Active Filter Upgrade program does not display Active Harmonic Filter (COM\*), verify the USB connections and also verify that the USB Service Port is still ON in Unit Settings > External Interface screen. Finally, if the problem persists, use a different USB cable.

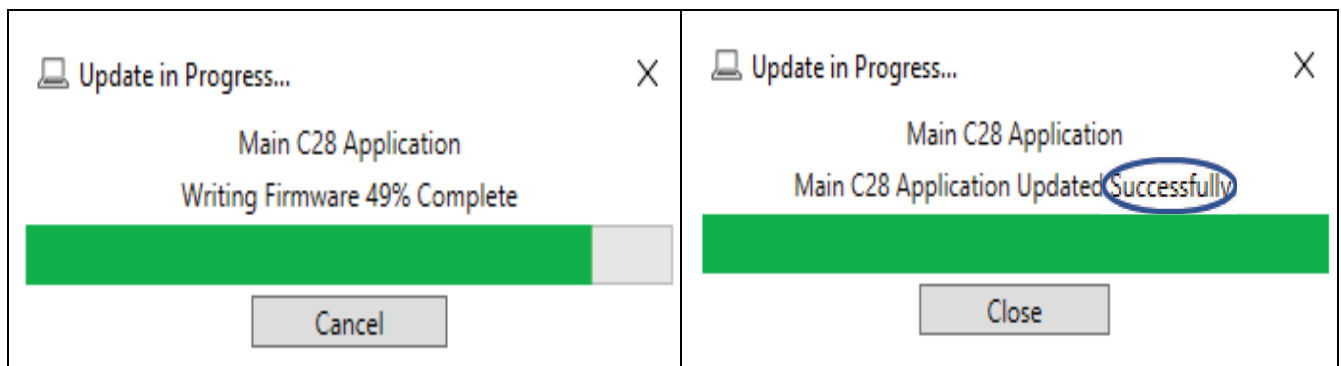


## Update Control Board Firmware

1. Select Active Harmonic Filter from the drop-down list in the Active Filter Upgrade screen.



2. Press Update Control Board button. After the process is completed, a message will be displayed stating that the application is successfully updated.



**NOTE:** Follow the below steps if the process fails to update,

- a. Unplug the computer from the service port.
  - b. De-energize the unit.
  - c. Wait for the 24 Vdc LED to turn off.
  - d. Energize the unit.
  - e. Return to “Enable Service Port” on page 15, and repeat the process.
3. Select Close.

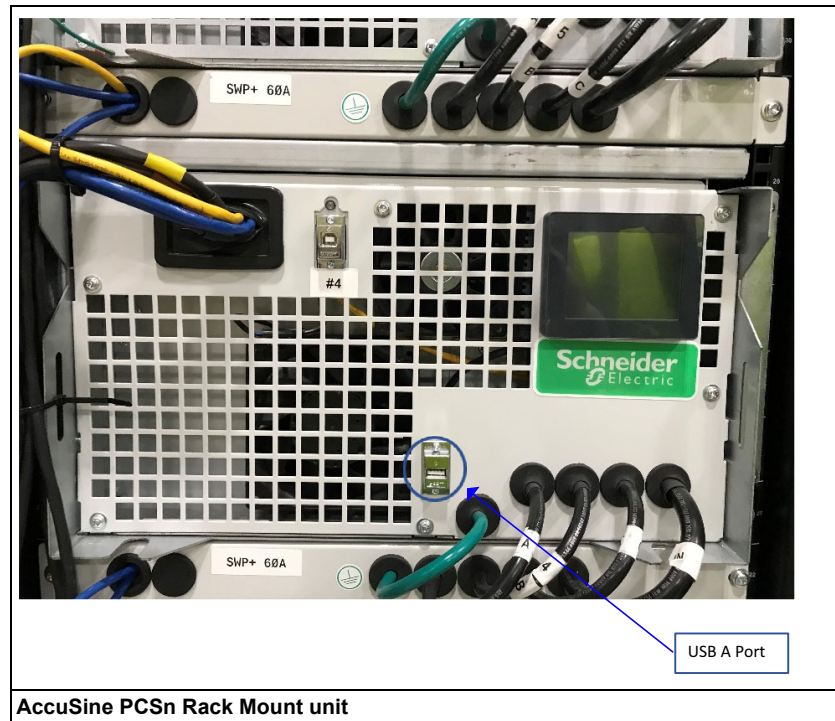
The HMI displays a warning message that control board initialization is in progress. This message disappears once the control board has been initialized.

The HMI will display firmware version mismatch, until the HMI is updated.

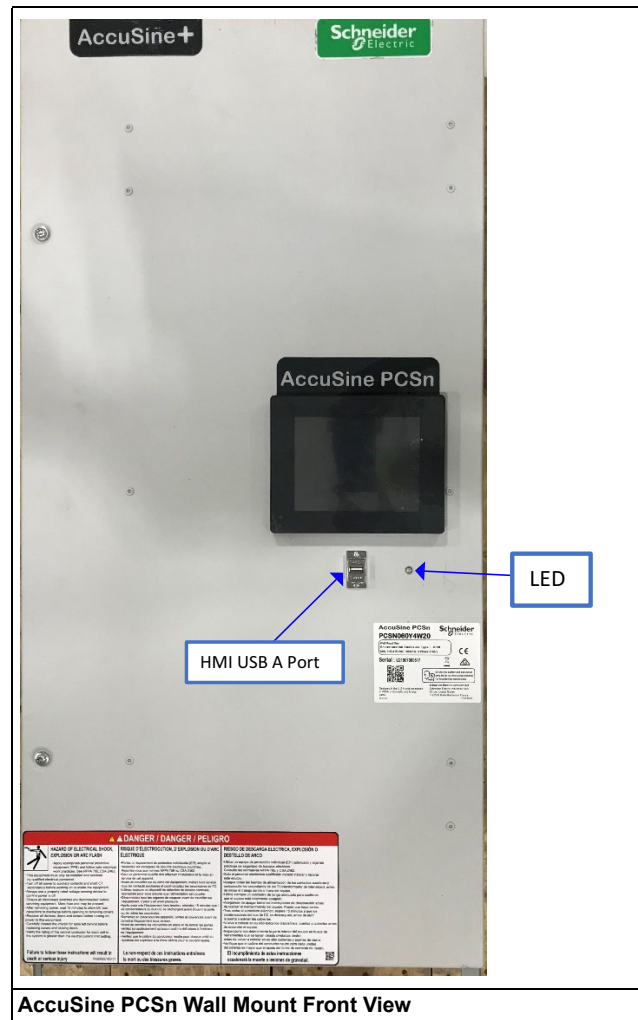
In Parallel systems, the HMI displays a warning message stating “Parallel System Version Mismatch”. This is normal until all units in the system have been updated. Once all units are successfully updated, this message will disappear.

## Update Human Machine Interface

1. Insert the flash drive into the USB A port of the HMI.





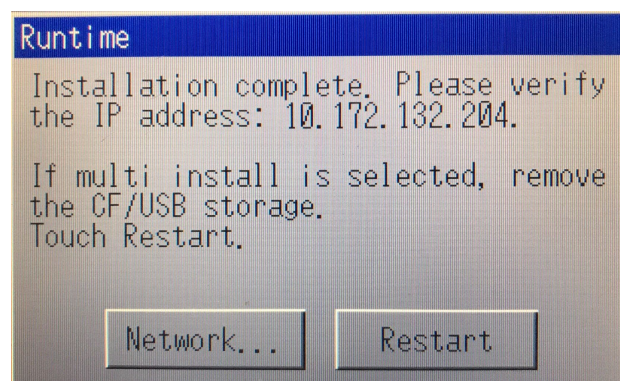


The HMI displays a message to confirm if you want to install the software.

2. Press Yes.

The HMI will re-boot and install the software.

3. At the end of the process, the HMI screen will display the options - Network and Restart.



4. Remove the USB flash drive.
5. Press Restart.




## Verify Update

1. Go to Unit Status → Unit Configuration and verify that the update was completed.
2. Verify that the HMI version matches with the version installed.
3. Verify that the Control DSP version matches with the version installed.

02/14/2020 2/4 10:28am

Unit Status Unit Configuration

HMI Versions:		Unit Setup:	
002.001.006		Unit Type	AHF
Control DSP Version:		Unit Size	30A
002.001.006		400V	60Hz
Protection DSP Version:		CT Conn.	3 CTs
002.001.002		CT Ratio	1000:5
Network Setup		CT Config	Source
IP	10.172.132.204		
Subnet	255.255.0.0		

Start System   

4. Verify that the date and time are correctly displayed on the Home Screen.



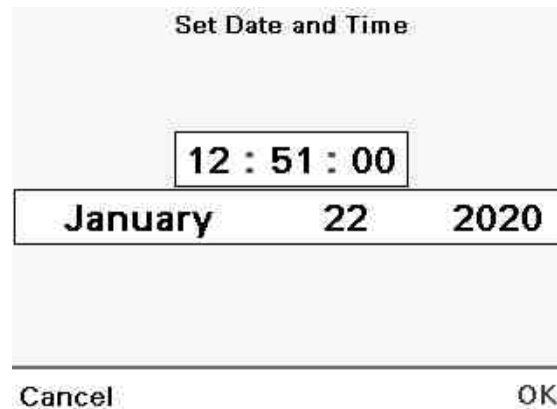
If the date and time is incorrect, follow the below steps:

- a. Go to Unit Settings page.
- b. Press on the date at the top left corner of the HMI screen.





- c. Set Date and Time screen is displayed.
- d. Set the date and time values by pressing on hours, minutes, month, date, and year on the screen.

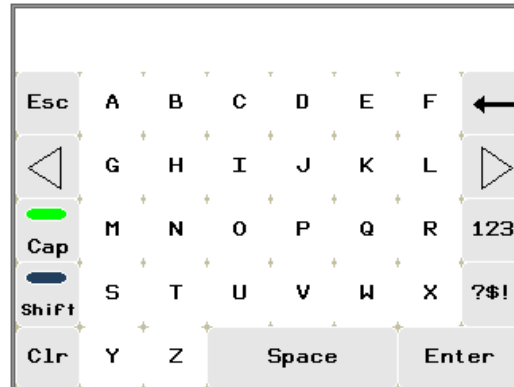


After updating the unit, the ADMIN password will be set to the new default password. The new default password is 3w7ADMN.

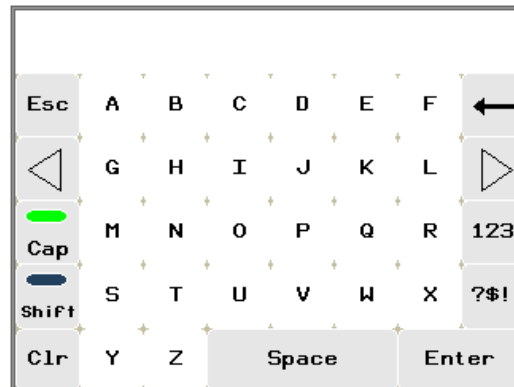
If a Static IP address is used for Modbus communication, refer to “Appendix B: Enter Static IP Address” on page 37. Verify that the unit is communicating with the facility Modbus system.

## Verify On Screen Keyboard

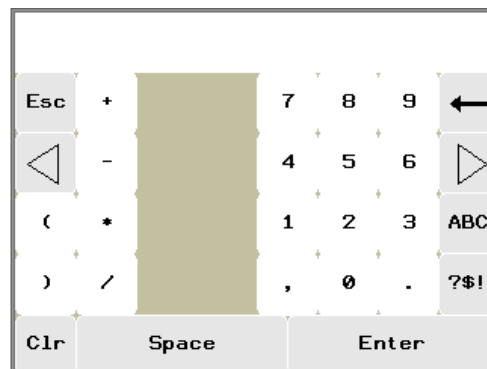
To enable Caps Lock function, press **Cap** icon. A green oval indicator above the **Cap** icon indicates that the Cap Lock function is enabled. To disable Caps Lock function, press **Cap** to change indicator to blue.



Press **Shift** icon to enable shift which will change the case of the next letter entered. A green oval indicator above the **Shift** icon indicates that the shift function is enabled.



Press icon **123** to display number keyboard. Press **ABC** on number keyboard to return to letter keyboard.

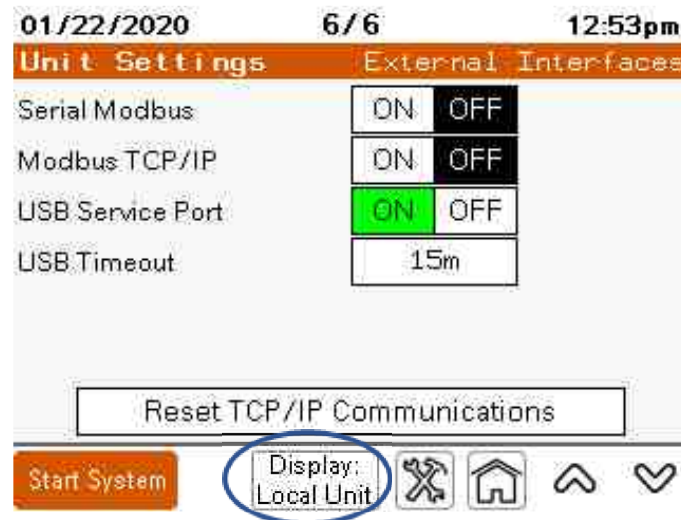


## Update Control Board AccuSine PCSn Expansion Units

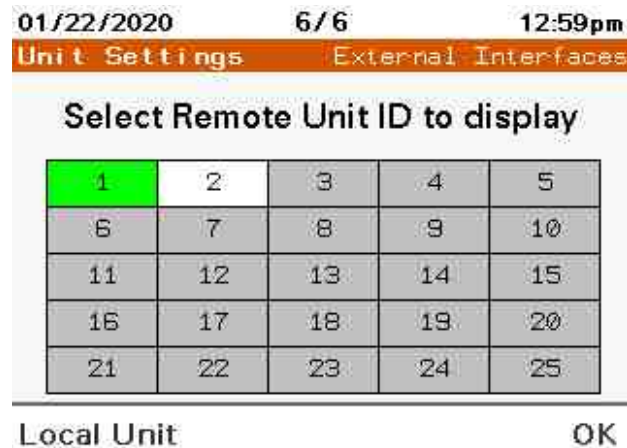
AccuSine PCSn Expansion units are the units without an HMI on the front panel.

When operating in a parallel system made up of more than one unit, login to the Expansion unit by using the ADMIN password, through the HMI of the Main unit (the unit with an HMI). After updating the unit, the ADMIN password will be set to the new password. The new password is 3w7ADMN.

1. Select Unit Settings on the Home screen.
2. Press Display: Local Unit icon.

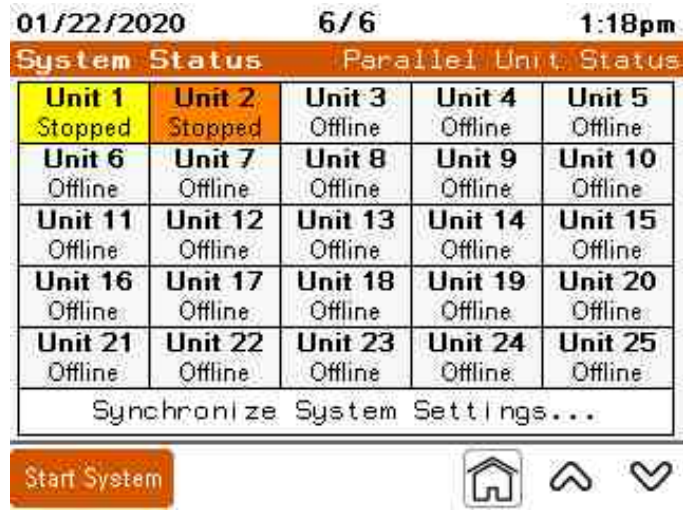


3. Press the unit number that is to be updated.



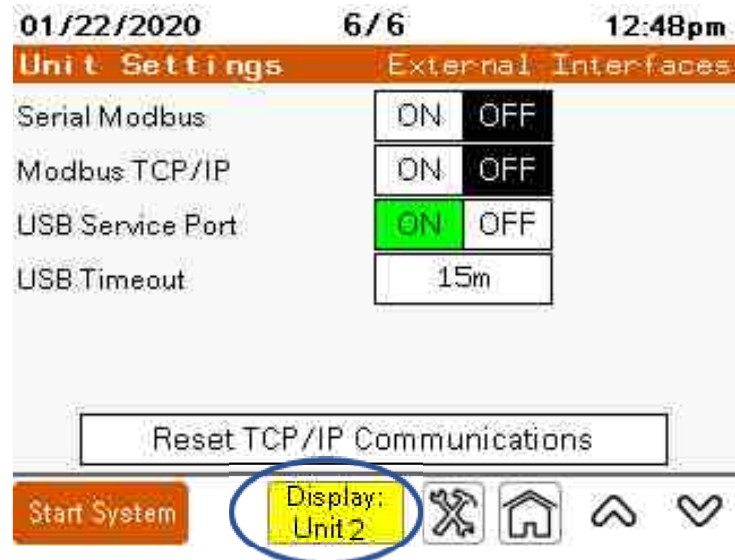
**NOTE:** To determine the unit number, goto System Status → Parallel Unit Status.

- Press the unit number to be identified. The unit number will flash yellow and orange on the screen. The LED on the front of that unit will flash to identify that it is the corresponding unit.

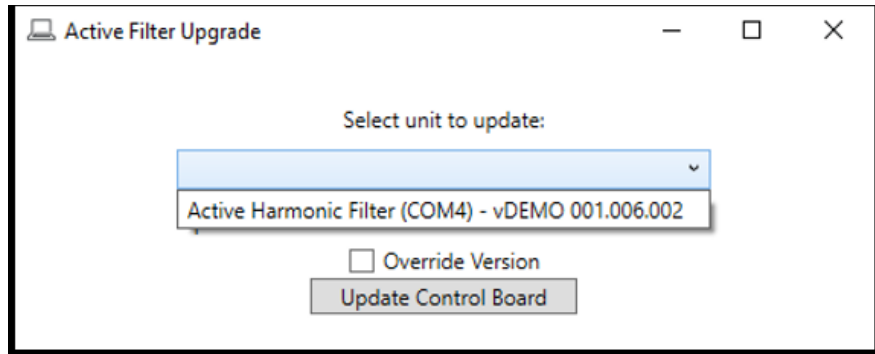


The External Interfaces screen on Unit Settings will display the unit under control.

- Turn the USB Service Port ON.

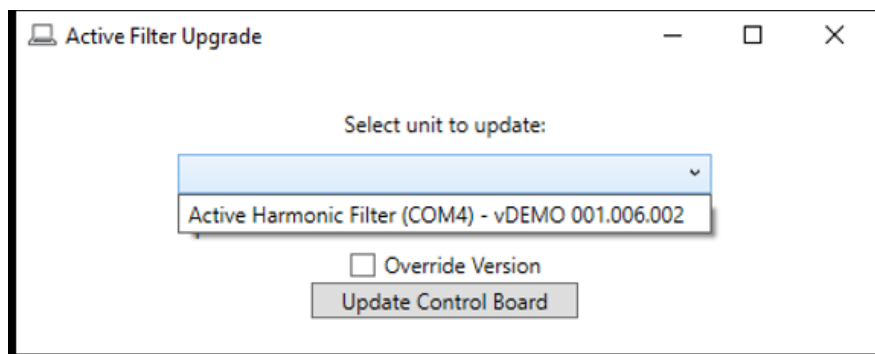


6. Plug the USB B end of the USB cable into the service port.  
The Active Filter Upgrade program should now display the active filter and a COM number will be assigned by the operating system of the computer.

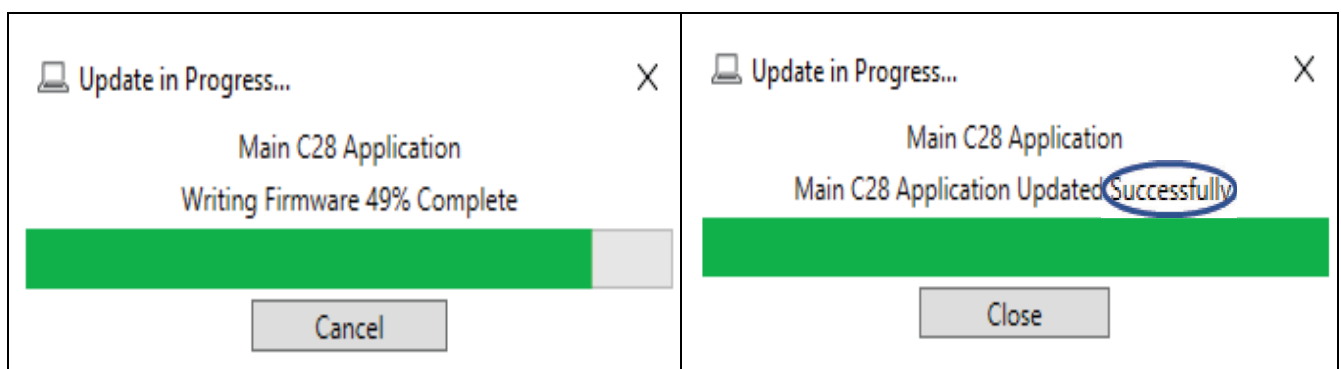


## Update Control Board Firmware

1. Select Active Harmonic Filter from the drop-down list in the Active Filter Upgrade screen.



2. Press Update Control Board button. After the process is completed, a message will be displayed stating that the application is successfully updated.



3. Select Close.

The HMI displays a warning message that control board initialization is in progress. This message disappears once the control board has been initialized.

The HMI will display firmware version mismatch, until the HMI is updated.

In Parallel systems, the HMI displays a warning message stating "Parallel System Version Mismatch". This is normal until all units in the system have been updated.

Once all units are successfully updated, this message will disappear.

**NOTE:** Follow the below steps if the process fails to update,

- a. Unplug the computer from the service port.
- b. De-energize the unit.
- c. Wait for the 24 Vdc LED to turn off.
- d. Energize the unit.
- e. Return to "Enable Service Port" section of this document and repeat the process.

## Troubleshooting

<b>Problem</b>	<b>Solution</b>
After inserting the USB flash drive into the HMI USB A port, the HMI does not display the updated screen.	Verify that all the files for the HMI update are under the root directory of the flash drive. These files must not be located in any folders.
Missing screens or unexpected events are displayed after updating the HMI.	Reinsert the flash drive containing the HMI Update files and update the HMI again.
Version mismatch warning is displayed after updating the HMI.	Verify that the correct HMI Update file is being used for the appropriate product range - AccuSine PCSn, AccuSine PCS+, and AccuSine PFV+.





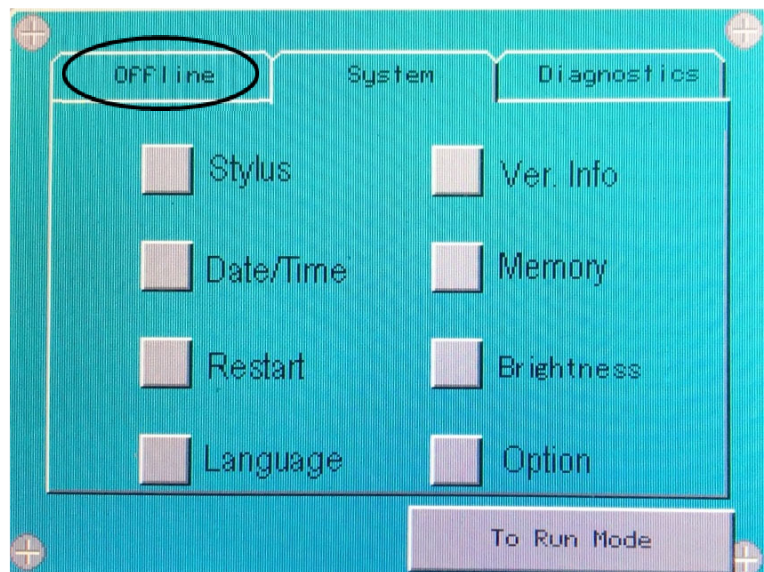
# Chapter 4 Appendices

## Appendix A: Obtain Static IP Address

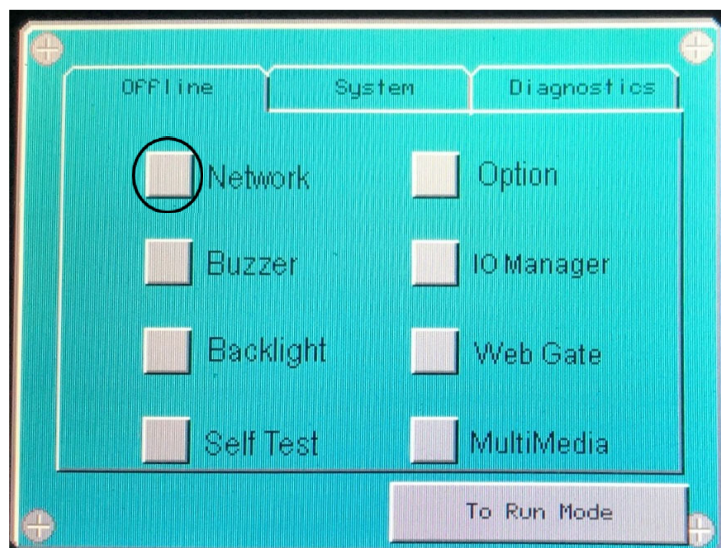
If a unit is setup to communicate through Modbus TCP/IP by a Static IP address, perform the following procedure.

**NOTE:** This procedure is not applicable if Modbus is not used or if DHCP IP address is used.

1. Press Unit Settings.
2. Press Display Settings.
3. Press Advanced HMI Settings.
4. Press the Offline tab.



5. Select Network.



A dialogue box is displayed with the message "Working with offline Settings will stop the user application and runtime. Continue?"

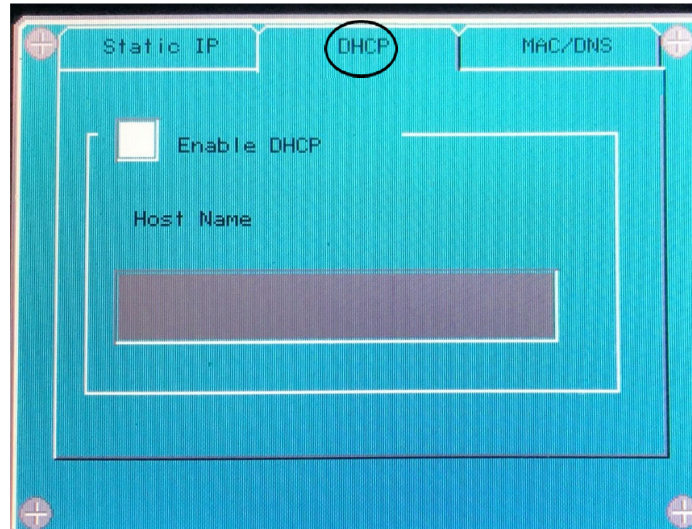
## 6. Press Yes

The HMI will restart.

## 7. After the HMI is restarted, press the DHCP tab and ensure that the enable DHCP check box is not selected.

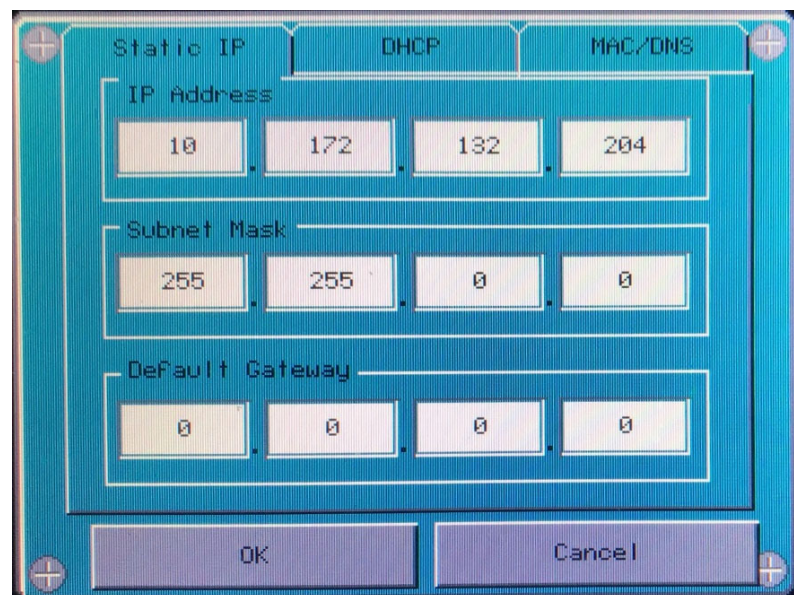
**NOTE:** Do not perform this procedure, if DHCP tab is not selected.

- If Enable DHCP is selected, goto Static IP tab, press Cancel and then press To Run Mode. The HMI reboots and returns to the Home screen.
- If Enable DHCP is not selected, then continue with this procedure.



## 8. Press Static IP tab.

## 9. Record the values in the IP Address, Subnet Mask, and Default Gateway. These values are required for the unit to communicate through Modbus TCP/IP with a Static IP address.



10. Press OK.

A dialog box is displayed with the message “The target is not connected to the network. Reboot the target for settings to take effect.”

11. Press Yes.

12. Press To Run Mode.

A dialog box is displayed with the message “Shut down and restart to enable settings. Restart Now?”

13. Press OK.

The HMI will restart at the Home screen.

14. Log in again with user name and password as ADMIN.

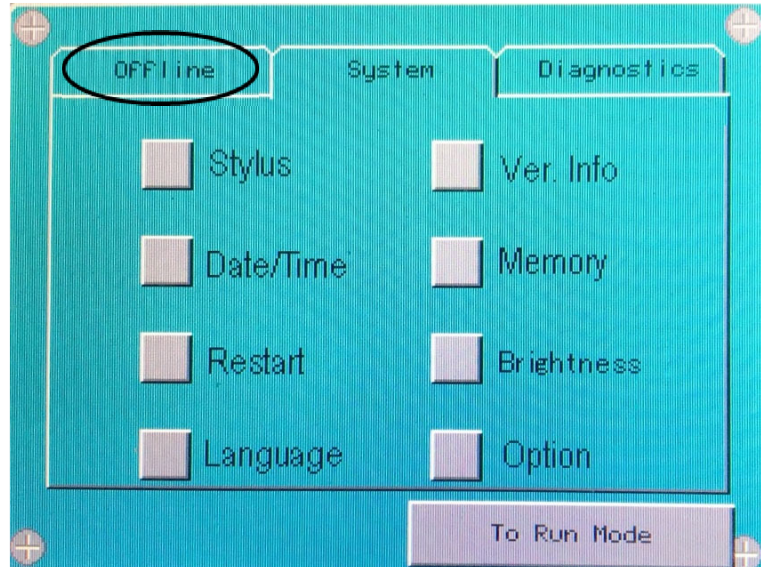




## Appendix B: Enter Static IP Address

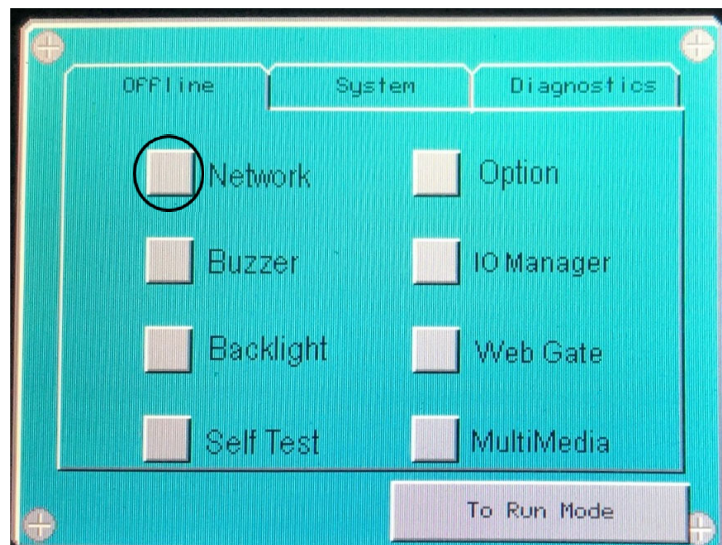
Perform the following procedures to set up the Modbus TCP/IP Static IP address:

1. Press Unit Settings.
2. Press Display Settings.
3. Press Advanced HMI Settings.
4. Press the Offline tab.



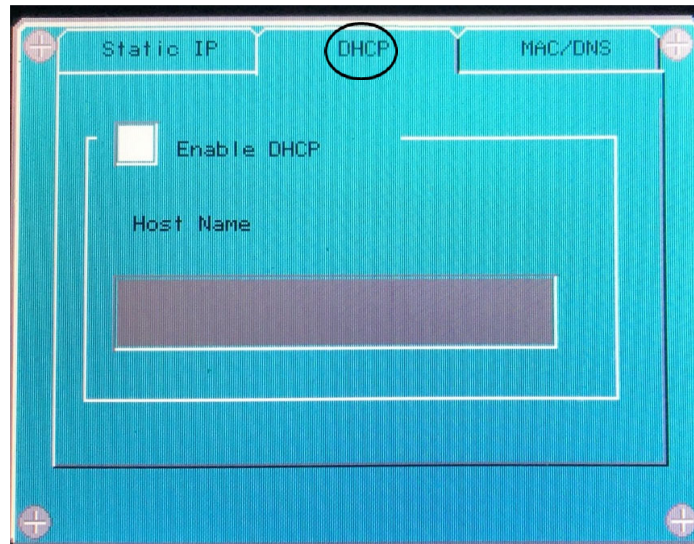
5. Select Network.

The HMI will restart for entering network settings.



6. After the HMI is restarted, press the DHCP tab and ensure that the Enable DHCP check box is not selected.

**NOTE:** The DHCP must be disabled to enter a Static IP address.



7. Press Static IP tab.
8. Enter IP address, Subnet Mask, and Default gateway values that was recorded earlier in the procedure.
9. Press OK.
10. Press To Run Mode.



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