# Power Meter Installation for 60 Hz PowerTAP

## Scope

Follow the instructions below to install and configure the 60 Hz Power Meter Acuvim II Series for the PowerTAP system.

## Safety

### Safety and Preparations

Follow all standard shop practices and safety procedures.

### Safety Compliance

Before beginning any procedure, ensure appropriate training, safety equipment, Lock-Out Tag-Out (LOTO), and any other applicable policies and procedures are identified and adhered to. A Job Safety Analysis (JSA) must be completed daily and signed by all personnel who are to be working in the area and to this procedure.

### Safety Considerations and PPE

**SAFETY INSTRUCTIONS** All work tasks require the use of standard Personal Protective Equipment (PPE) which includes Hard Hats, Flame-Resistant Coveralls, Impact Gloves, Steel-Toed Footwear, and Safety Glasses.

- Lock Out Tag Out

- Step Off Hazard

- Slippery Floor

- Pinch Points

- Electrocution Risk

# Installing the Current Transformers (CTs)

| ⚠ DANGER | **SHOCK HAZARD** – Ensure power has been removed from the transfer panel and LOTO has been applied before starting this procedure. |

## Current Transformers Label Information Guide

| *NOTICE* | All current transformers rated input and output information can be found on the silver label on the CT, as shown in Figure 1.<br><br>The rated input of the CT will be set as CT1, and the rated output will be set as CT2 for the Acuvim II Series Meter. |



Figure 1:  Current transformers label

## Installing the Current Transformers

1. Remove the covers from the transfer panel to expose the transfer switch bus bars.

2. Install the CTs on the transfer switch bus bars, as shown in Figure 2.

   **NOTICE** Ensure the current flow arrows on the CTs point toward the current flow. If you need assistance, contact Engineering.



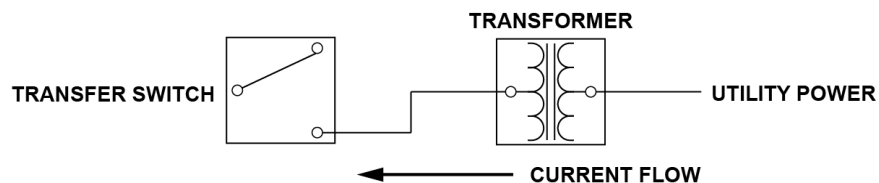Ensure the arrow on the CT is pointing in the direction of current flow.

Figure 2: Installing the CTs

# Wiring the Power Meter and CTs

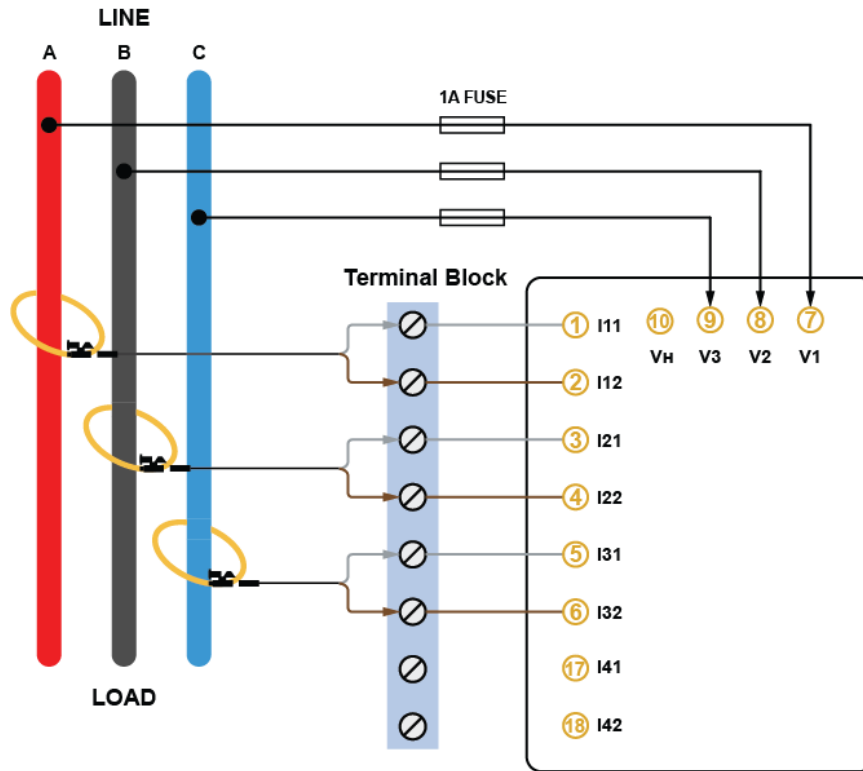1. Wire the power meter and the CTs in 3LL-3CT configuration, as shown in Figure 3.

Figure 3: Wiring the power meter and Rogowski Coils (3LL-3CT)

# Setting up the Power Meter Acuvim II

| *NOTICE* | For the Initial meter setup, you **must** set the wire mode, PT and CT ratios. Follow the steps below to do this from the meter's display. |
| --- | --- |

## Entering Setting Mode

1. While the meter is in Meter mode, to enter Setting mode, press the **H** and **V/A** keys simultaneously for about one second, then release; the mode selection screen will be activated. The screen should become blank, and the Meter icon will be flashing. See Figure 4.
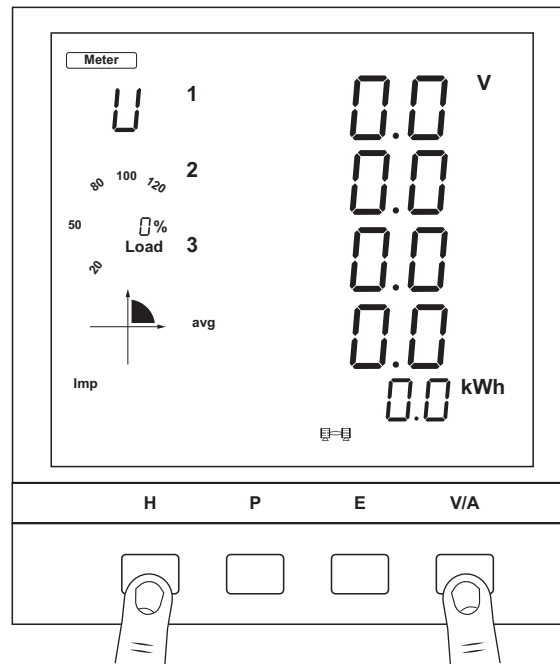


Figure 4: Entering setting mode

2. On the mode selection screen, press **P** repeatedly to move right until Setting mode is selected. Then, press **V/A** to confirm. The screen will briefly display **ADDR 001**, which means the meter address is 001. It will then jump to a password screen (Figure 5 on page 6).

# Entering the Password

1. The display will show **PASSWORD** as shown in Figure 5. Leave the default password as 0000 and press **V/A** to enter the parameter selection mode. The screen will be directed to the parameter settings main menu.
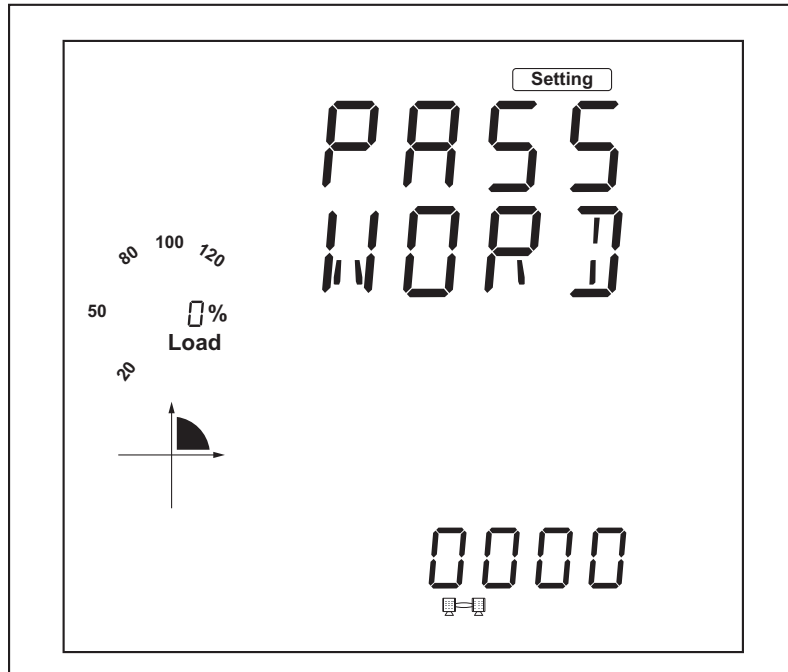


Figure 5: Entering the password

2. To enter a password:

    a. Press **H** to move the flashing cursor to the next position.

    b. Press **P** to increase the number by 1.

    c. Press **E** to decrease the number by 1.

    d. Press **V/A** to confirm the password.

## Parameter Settings Main Menu

1. This screen displays options for System (SYS), Input/Output (I/O), Network (NET), and Alarm (ALM). While the cursor is in SYS, press **V/A** to enter the System settings menu. In this mode, you will see screens for various parameter settings. See Figure 6.
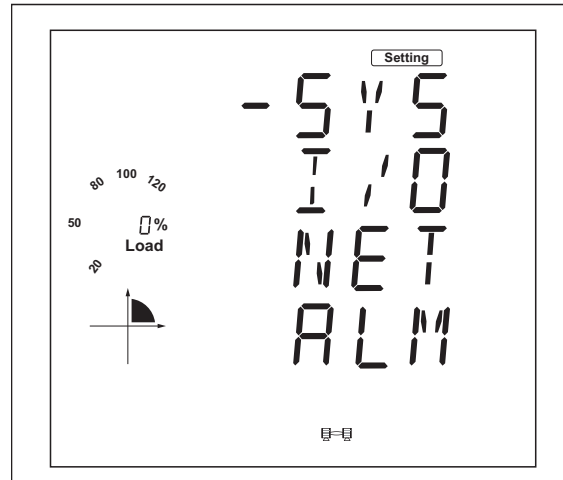


Figure 6: Entering system settings menu

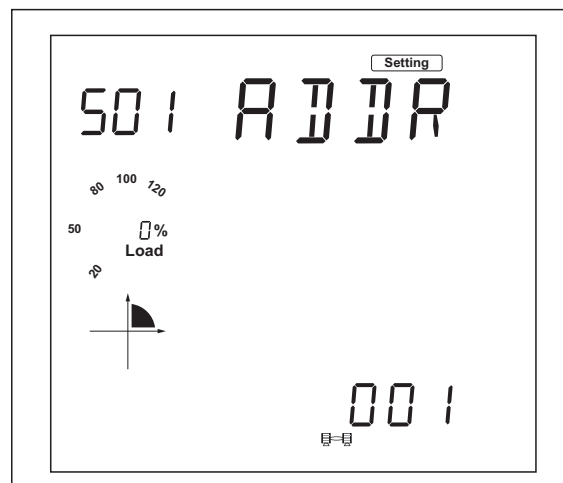2. The screen displays parameter S01: Communication Address (ADDR 001), meaning the meter address is 001. Keep this setting as 001. See Figure 7.



Figure 7: S01: Communication address screen

3. Press **P** repeatedly until you see screen S04: Voltage Wiring Mode (WIRE MODE U)(Figure 8 on page 8).

4. The screen displays S04: Voltage Wiring Mode (WIRE MODE U 3LL), meaning the mode is 3-Phase 3-Wire Delta.
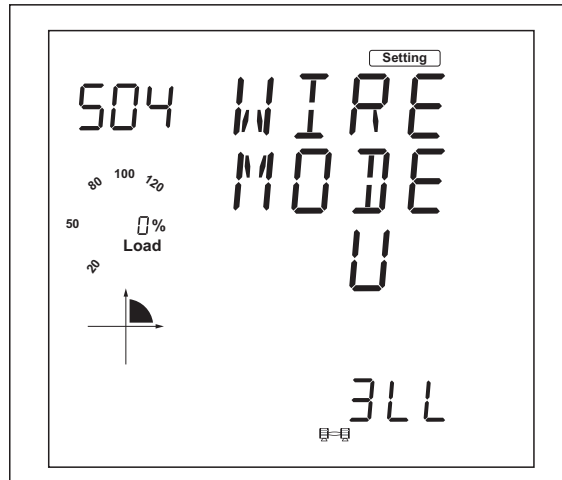


Figure 8:  S04: Voltage wiring mode screen

To change the setting:

a. Press **V/A**; the cursor should now flash.

b. Press **P** or **E** to select the required voltage wiring mode.

c. Press **V/A** to confirm the change.

5. Press **P** to get to screen S05: Current Wiring Mode (WIRE MODE I) (Figure 9 on page 9).

6.  The screen displays S05: Current Wiring Mode (WIRE MODE I 3CT), meaning the current wiring mode is 3 CTs.
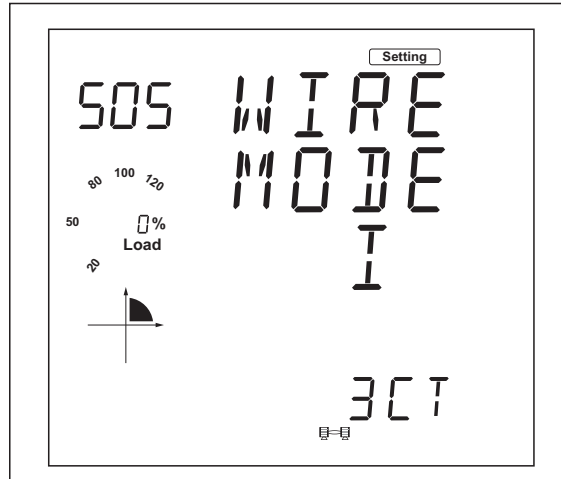


Figure 9:  S05: Current wiring mode screen

To change the setting:

a. Press **V/A**; the cursor should now flash.

b. Press **P** or **E** to select the required current wiring mode.

c. Press **V/A** to confirm the change.

7.  Press **P** to get to screen S06: PT1 (Figure 10 on page 10).

8. The screen displays S06: PT1 400, meaning no potential transformer (PT) is used. Keep this setting as the default 400.
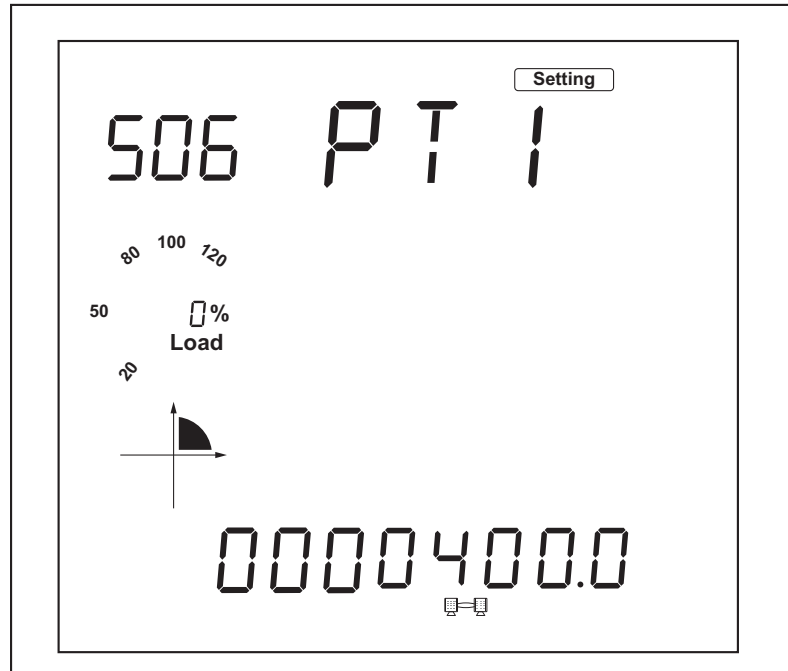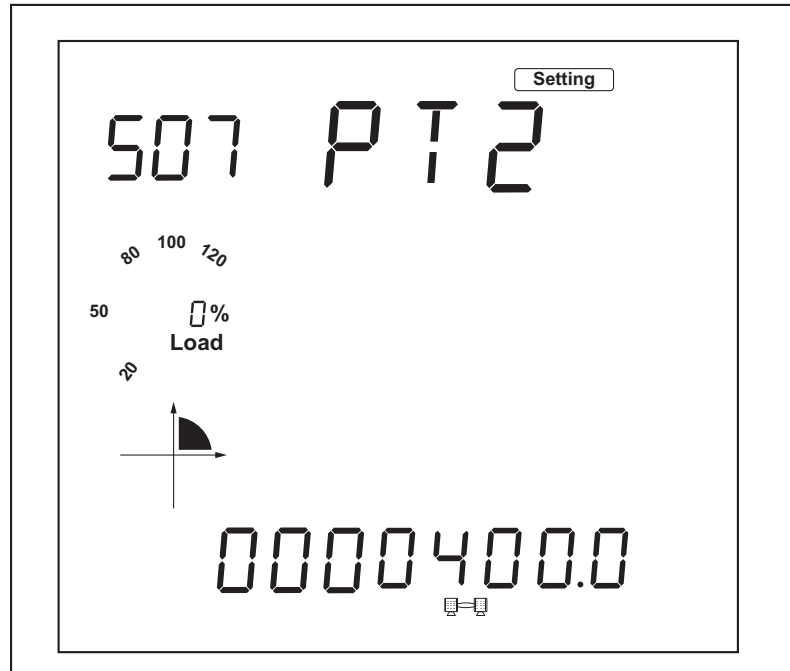


Figure 10: S06: PT1 screen

To change the setting:

a. Press **H** to move the flashing cursor to the next position.

b. Press **P** to increase the number by 1.

c. Press **E** to decrease the number by 1.

d. Press **V/A** to confirm the change.

9. Press **P** to get to screen S07: PT2 (Figure 11 on page 11).

10. The screen displays S07: PT2 400, meaning no potential transformer (PT) is used. Keep this setting as the default 400.



Figure 11: S07: PT2 screen

To change the setting:

a. Press **H** to move the flashing cursor to the next position.

b. Press **P** to increase the number by 1.

c. Press **E** to decrease the number by 1.

d. Press **V/A** to confirm the change.

11. Press **P** to get to screen S08: CT1 (Figure 12 on page 12).

12. The screen displays S08: CT1 5000, meaning the primary rating of CT is 5000. Change this value if it is different.
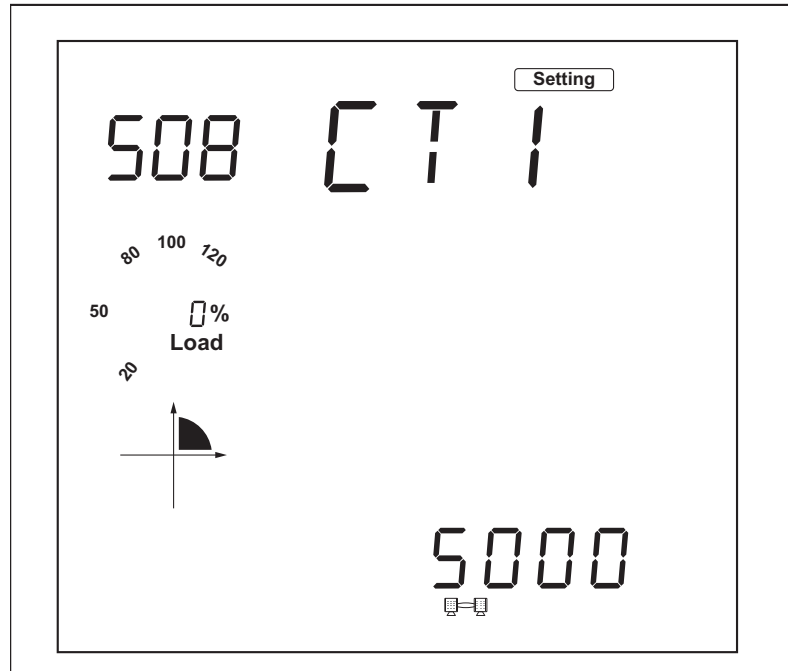


Figure 12:  S08: CT1 screen

To change the setting:

a. Press **H** to move the flashing cursor to the next position.

b. Press **P** to increase the number by 1.

c. Press **E** to decrease the number by 1.

d. Press **V/A** to confirm the change.

13. Press **P** to get to screen S09: CT2 (Figure 13 on page 13).

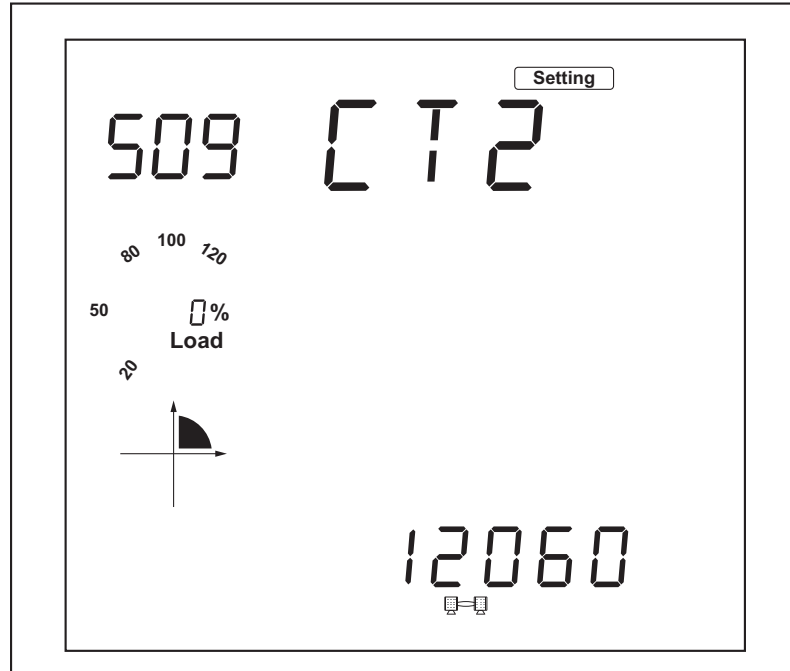14. The screen displays S09:CT2 120 60, meaning the secondary value of the CT is 120/60.



Figure 13: S09: CT2 screen

To change the setting:

a. Press **V/A**; the cursor should now flash.

b. Press **P** or **E** to select the required current wiring mode.

c. Press **V/A** to confirm the change.

15. To exit the parameter settings mode, press **H** and **V/A** simultaneously to return to the mode selection screen; the Settings icon will flash. Then, press **P** to move the cursor to the Meter icon and press **V/A** to return to the Meter data mode.

# Setting up the NET settings

1. Follow steps "Entering Setting Mode" on page 5. and "Entering the Password" on page 6. to get to the Parameter Settings Main Menu. Enter the SYS parameter screen. See Figure 6 on page 7.

2. Press **P** repeatedly until you see screen S34: PROTOCOL 2, as shown in Figure 14.

   a. Press **V/A** to modify the setting.

   b. Press **P** or **E** to select 'WEB2'.
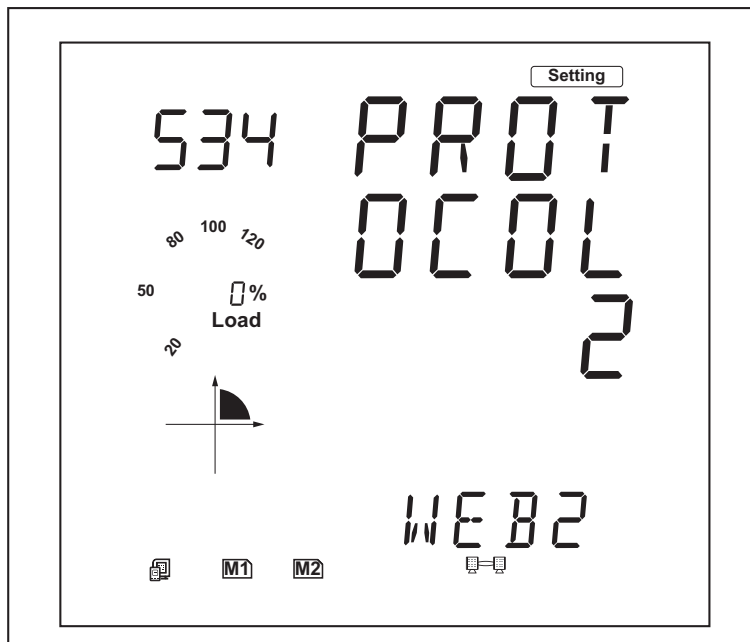
   c. Press **V/A** to confirm the change.



Figure 14:  S34: PROTOCOL 2 screen

3. Once the protocol 2 setting is configured for WEB2, you can view all necessary settings in the meters NET settings. Press the **H** button to exit the system setting and return to the "Parameter Settings Main Menu" on page 7.

   a. Press **P** or **E** to move the cursor to 'NET'

   b. Press **V/A** to enter the Ethernet module settings.

4. Press **P** to get to N01:DHCP (Figure 15 on page 15).

5. Change the DHCP setting to "MANU".

    a. Press **V/A** to edit the setting

    b. Press **P** or **E** to change the setting to "MANU"
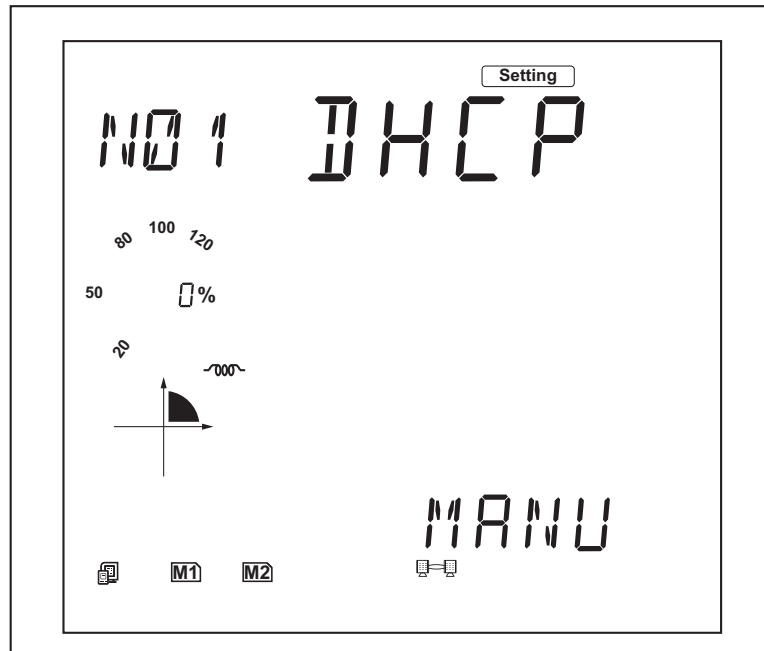
    c. Press **V/A** to confirm



Figure 15: N01: DHCP

6. Press **P** to get to N02:IP address for Ethernet port 1 (Figure 16 on page 16).

7.  Change the Ethernet IP address to **192.168.1.81**

    a. Press **V/A** to configure the IP address

    b. Press **H** to scroll through the digits

    c. Press **P** or **E** to change the value of the flashing cursor

    d. Press **V/A** to confirm
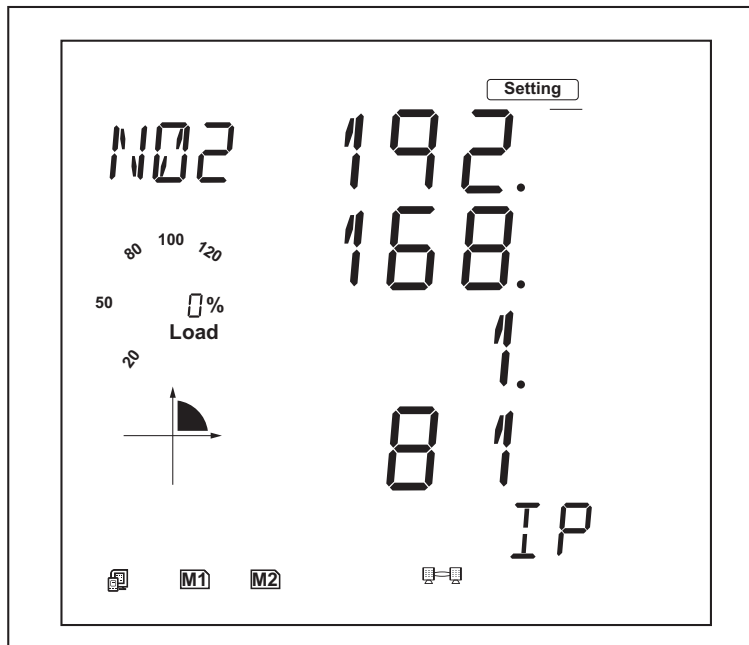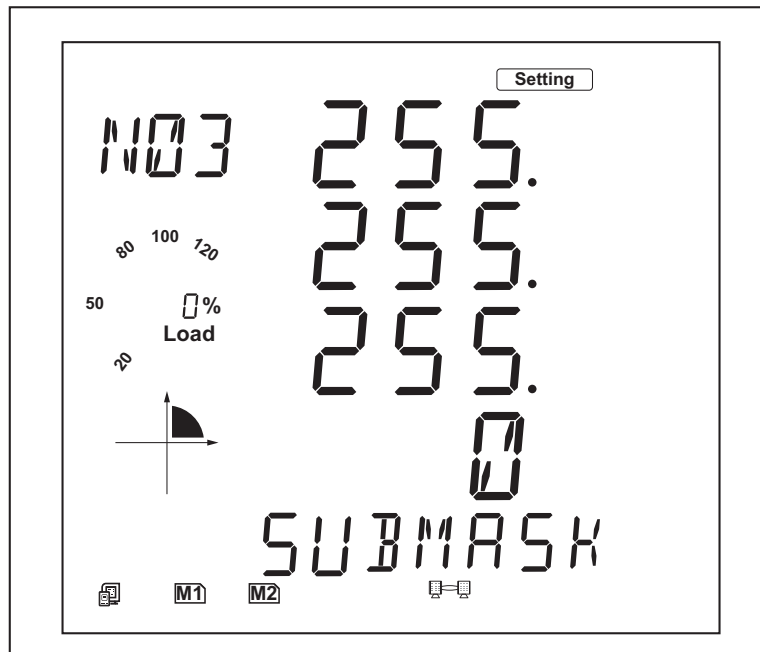


Figure 16: N02: IP Address

8.  Press **P** to get to N03: Subnet Mask for Ethernet port 1 (Figure 17 on page 17).

9. Change the Subnet Mask to **255.255.255.0**

    a. Press **V/A** to configure the Subnet Mask

    b. Press **H** to scroll through the digits

    c. Press **P** or **E** to change the value of the flashing cursor

    d. Press **V/A** to confirm



Figure 17:  N03: Subnet Mask

10. Press **P** to get to N04: Gateway for Ethernet port 1 (Figure 18 on page 18).

11. Change the Gateway address to **192.168.1.1**

   a. Press **V/A** to configure the Gateway

   b. Press **H** to scroll through the digits

   c. Press **P** or **E** to change the value of the flashing cursor

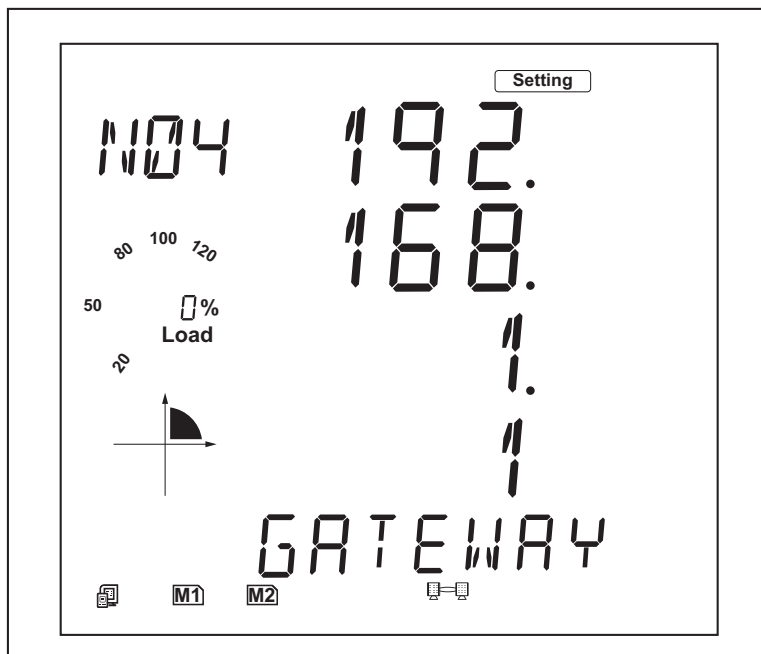   d. Press **V/A** to confirm



Figure 18:  N04: Gateway

**NOTICE**    For 3rd Party Rigs, change the Gateway address to **192.168.1.254**

12. Press **P** to get to N05: DNS Primary Server for Ethernet port 1 (Figure 19 on page 19).

13. Change the DNS Primary Server to **8.8.8.8**

    a. Press **V/A** to configure the DNS Primary Server

    b. Press **H** to scroll through the digits

    c. Press **P** or **E** to change the value of the flashing cursor
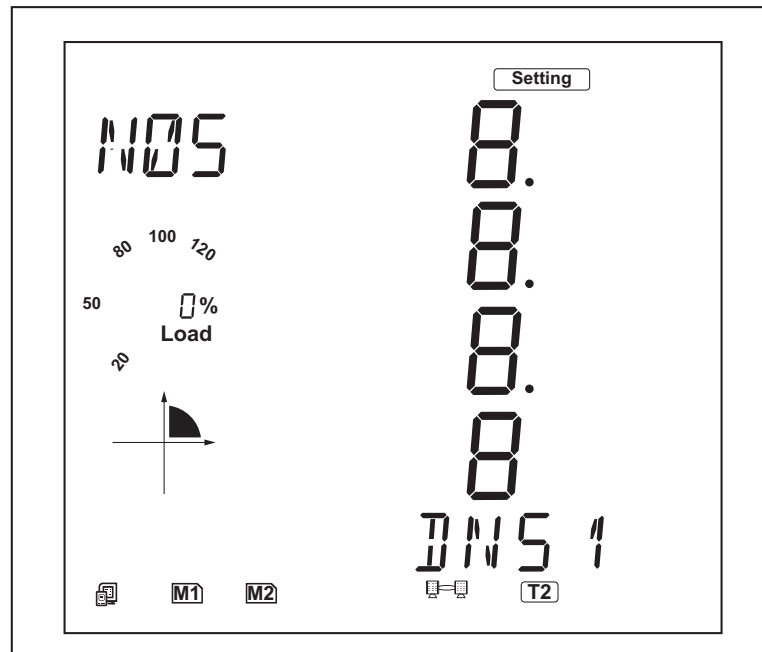
    d. Press **V/A** to confirm



Figure 19:  N05: DNS Primary Server

14. Press **P** to get to N06: DNS Secondary Server for Ethernet port 1 (Figure 20 on page 20).

15. Change the DNS Secondary Server to **8.8.4.4**

    a. Press **V/A** to configure the DNS Secondary Server

    b. Press **H** to scroll through the digits

    c. Press **P** or **E** to change the value of the flashing cursor

    d. Press **V/A** to confirm
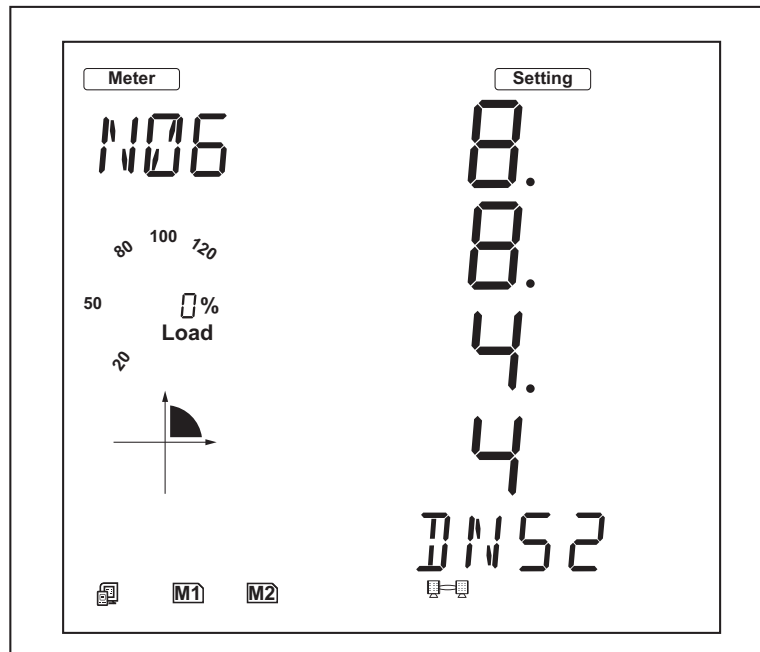


Figure 20:  N06: DNS Secondary Server

16. Press **P** to get to N09: NET REST (Figure 21 on page 21).

17. After making any changes to the NET settings, the Ethernet module must be rebooted.

   a. Press **V/A** to reboot the module, the cursor will begin to flash

   b. Press **P** or **E** to change the setting to "RESET"

   c. Press **V/A** to confirm

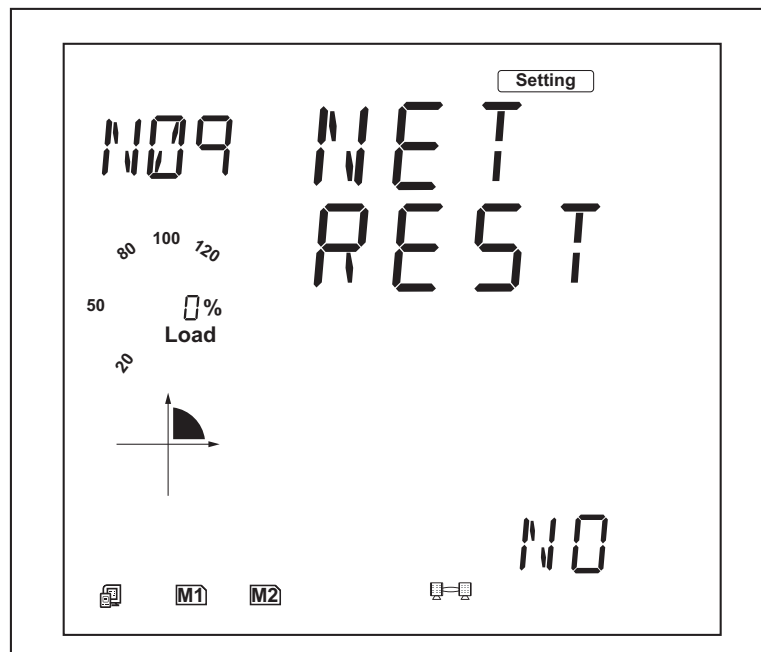   d. The cursor will return to 'NO' once the module has successfully reset



Figure 21: N09: Net Reset

# Configuring Web2 Module and Time

> **NOTICE** To connect to the meter and WEB2 Module, the computer's IP address needs to be on the same network at the meter (i.e., **192.168.1.20**). The subnet mask, default gateway, and DNS servers should match the ones set up in the meter. Connect a computer to the Ethernet 1 port of the communication module.

1. Connect to a computer

2. Enter the IP address of the Acuvim II into the internet browser.

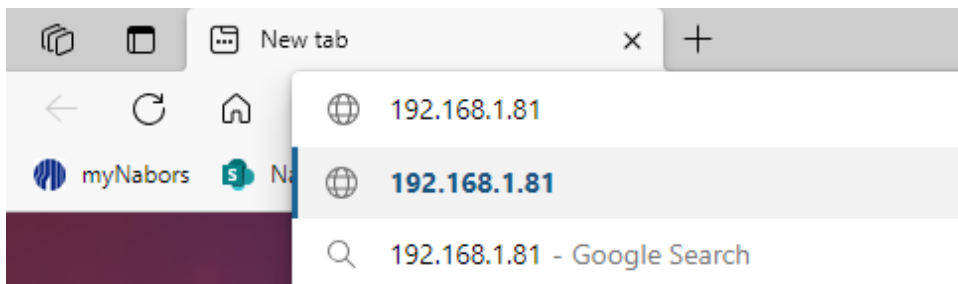> **NOTICE** The IP address should be **192.168.1.81** from (Step 7 on page 1-16).



Figure 22: Web connection

3. Sign into the meter
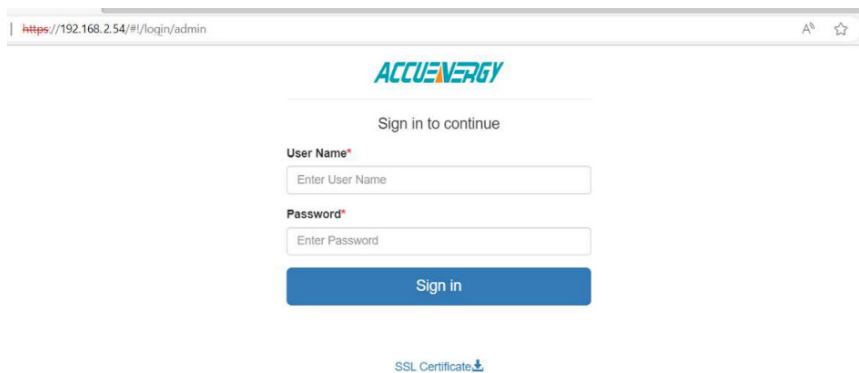   a. Username: **admin**
   b. Password: **admin**



Figure 23: Sign-in page

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4. After sign-in, you will be directed to the "Dashboard" page. Click on settings.
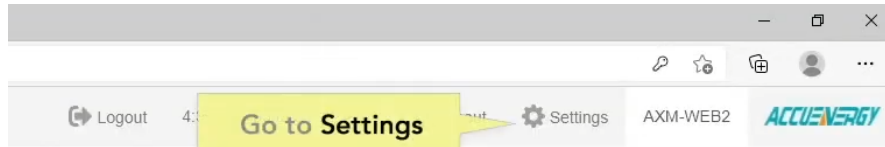


Figure 24: Settings

5. Click on Communications. Then click on Time/Date Settings. Enter the current date and time in the Device Clock field.
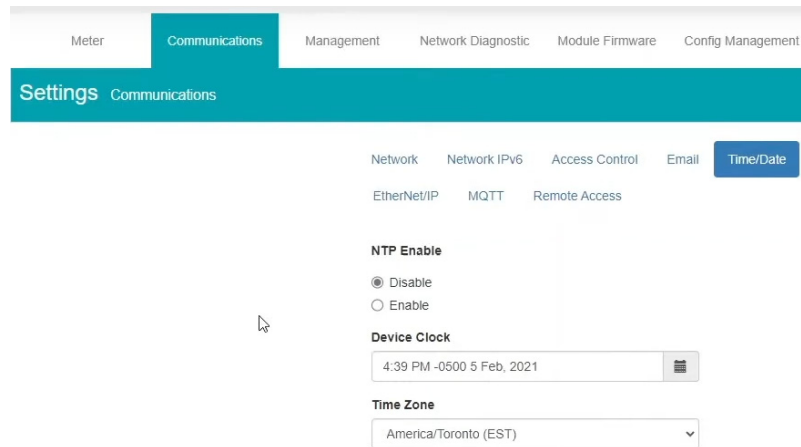


Figure 25: Time/Date Settings

6. Click Save at the bottom. After clicking save, it will ask to reboot the meter. Click Reboot Now.
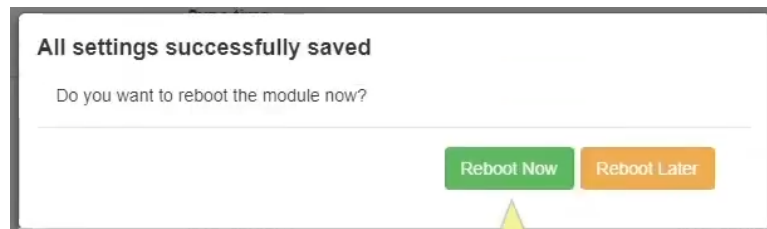


Figure 26: Reboot Screen

7. The initial setup is now complete. You can begin to read the meter data accurately and pull trend logs.

# References

- Acuvim II Series Manual

- How to Program Acuvim II YouTube video:

  https://www.youtube.com/watch?v=6CjgxG9pmfw&t=2s

- AXM-WEB2 User Manual

- AXM-WEB2 Configuration Videos:

  https://www.accuenergy.com/support/video-guides/?section=axm-web2-configuration-videos#