Acuvim II Series Power Meter
AXM WEB2
User's Manual



ACCUENERGY

The information contained in this document is believed to be accurate at the time of publication, however, Accuenergy assumes no responsibility for any errors which may appear here and reserves the right to make changes without notice. Please ask the local representative for latest product specifications before ordering.

Please read this manual carefully before installation, operation and maintenance of the Acuvim II series meter. The following symbols in this manual are used to provide warning of danger or risk during the installation and operation of the meters.

Electric Shock Symbol: Carries information about procedures which must be followed to reduce the risk of electric shock and danger to personal health.

Safety Alert Symbol: Carries information about circumstances which if not considered may result in injury or death.

Prior to maintenance and repair, the equipment must be de-energized and grounded. All maintenance work must be performed by qualified, competent accredited professionals who have received formal training and have experience with high voltage and current devices. Accuenergy shall not be responsible or liable for any damages or injuries caused by improper meter installation and/or operation.

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1. Introduction to Ethernet

Ethernet was originally developed by Xerox and then further developed by DEC and Intel. This networking technology uses Carrier Sense Multiple Access with Collision Detection (CDSM/CD) protocol and provides transmission speeds up to 100Mbps.

Ethernet is a not a network but more of a standard. It is the most current communication standard Local Area Network(LAN). This standard defines the type of cable that is used and the method of Signal Processing.

2. Functional Description of the Ethernet module

Please read the Technical Data and specifications of the Ethernet module in the Appendix prior to using it.

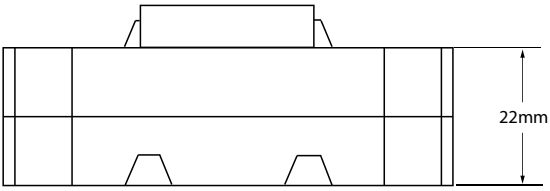
The AXM-WEB2 module supports the Modbus-TCP protocol. When connected to the Acuvim II series meter, it is a slave device that can only respond to queries. The default value for the Modbus Port is 502. The user defined range is 2000~5999.

The AXM-WEB2 supports the SMTP protocol. It has the ability to send emails based on a time interval or when there is a triggered event. It can send mail from encrypted servers and servers that use different SMTP ports.

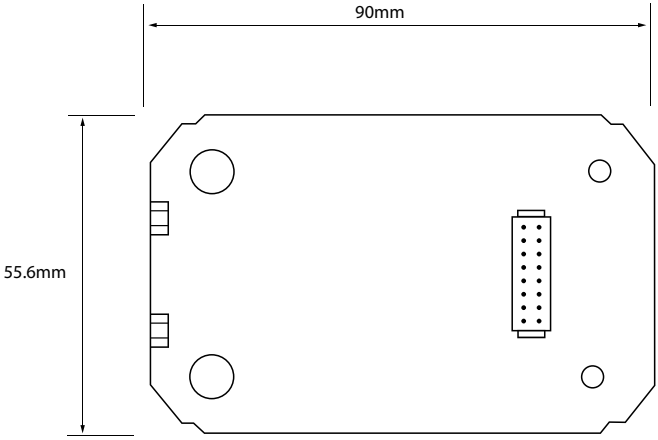
The AXM-WEB2 protocol supports HTTPS protocol. It is used as an HTTPS server and the default value of the protocol port in 443.

Using the HTTPS protocol, the AXM-WEB2 can send post requests to both HTTP and HTTPS servers.

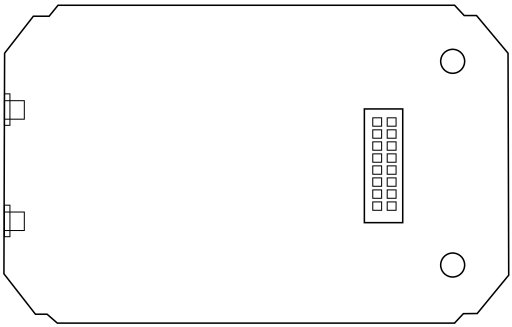
3. Appearance and Dimensions



(Side View)

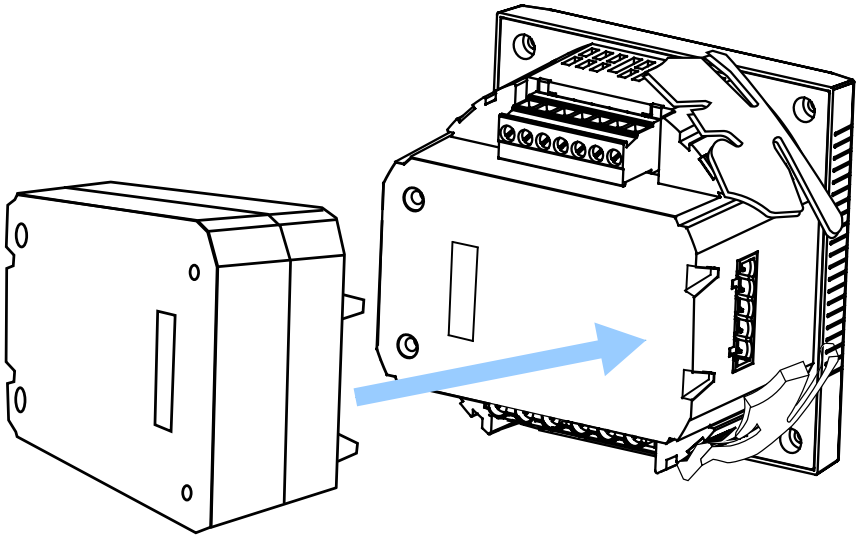


(Top View)



Bottom View)

4. Installation Method



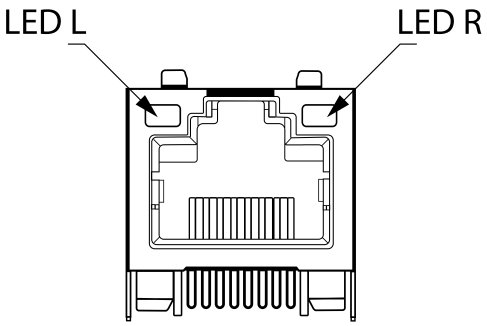
The AXM-WEB2 module is linked to the Acuvim II series meter by a communication plug. Other extended modules such as the IO modules can be linked to the Acuvim II series meter through the AXM-WEB2.

1. Remove cover from the back of the Acuvim II series meter which will expose the socket.
2. Insert the installation clips to the grooves in the Acuvim II series meter and then press the AXM-WEB2 module lightly to establish a linking between meter and module.
3. Tighten the installation screws.

Note: Installation with power to the meter is forbidden.

5. Definition of RJ45

The AXM-WEB2 uses two standard RJ45 connectors to access the Ethernet network. The mechanical and electrical characteristics of the connector are consistent with the requirements of IEC 603-7.



Top View

Pin number	Name	Description
1	TX+	Tranceive Data+
2	TX-	Tranceive Data-
3	RX+	Receive Data+
4	n/c	Not connected
5	n/c	Not connected
6	RX-	Receive Data-
7	n/c	Not connected
8	n/c	Not connected

LED_L (Yellow): Displays the speed status. When the LED is on it indicates 100Mpbs, whiles an off LED represents a speed of 10Mbps.

LED_R (Green): Displays the link and activity status. When the LED is on it indicates that the link status. When the LED is flashing it indicates that there is activity.

6. Initializing the Ethernet module

The default settings in the Acuvim II series meter are as followed:

Ethernet 1 (Static IP address)

IP Address (192.168.1.254);

Subnet Mask (255.255.255.0);

Gateway (192.168.1.1);

DNS Server 1 (8.8.8.8);

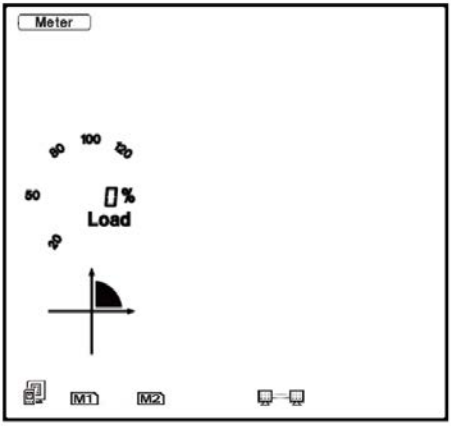
DNS Server 2 (8.8.4.4);

Modbus Port 502

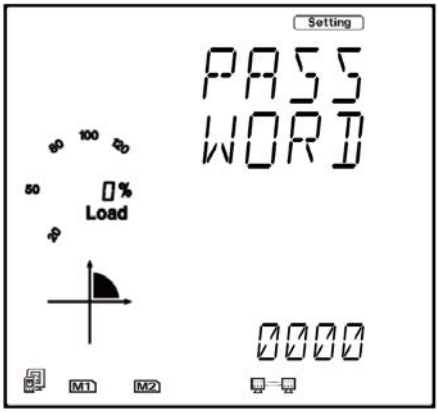
Ethernet 2 (Dynamic IP address)

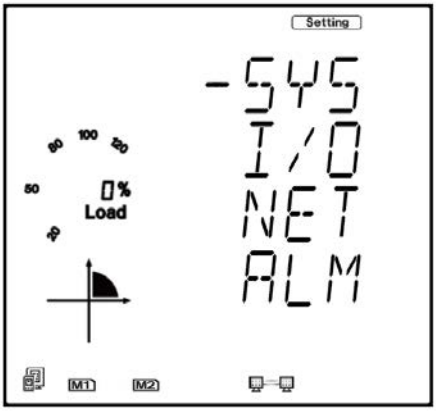
This information can be found by using the buttons from the meter display. The following is how to configure the Ethernet module settings from the display:

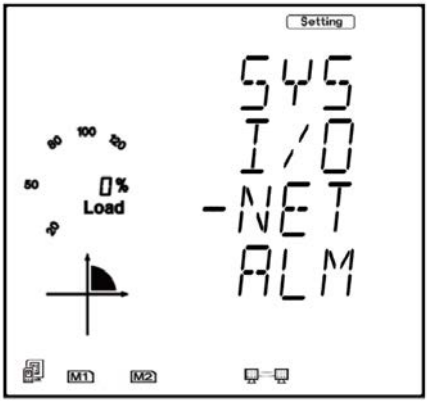
- Press the 'H' and 'V/A' buttons simultaneously on the Acuvim II series. Release the buttons and the meter will enter the meter selecting mode, as indicated by the flashing 'Meter' cursor.



- Press the 'P' or 'E' button to move the cursor to 'Setting'. Press 'V/A' button to enter the parameter setting mode. The device address page is the first page of the 'Setting' mode. It will show the Modbus address of the meter for a second before prompting for the password of the device. Press 'V/A' button to confirm password and enter the parameter setting page. Press the 'P' or 'E' button to move the cursor to 'NET' and press the 'V/A' button to enter the Ethernet module settings.

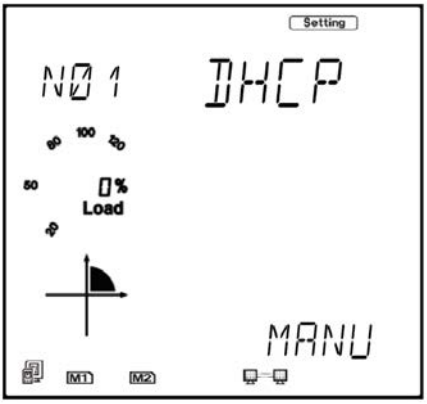




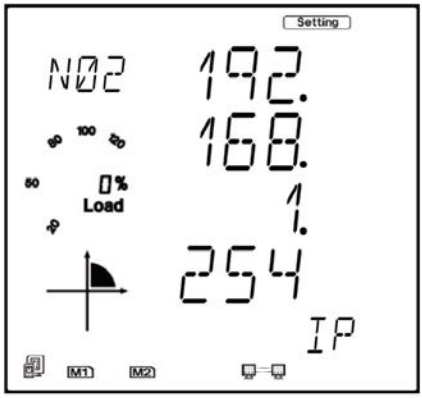


- The first page of the NET Settings will be the N01 DHCP setting. By default this is configured to Manual. Setting this configuration to Auto will allow the router to assign the meter with an IP address, whiles Manual will allow the user to configure the IP address. Press the 'V/A' button to enter edit mode. Press 'P' or 'E' to change the setting and press 'V/A' to confirm.

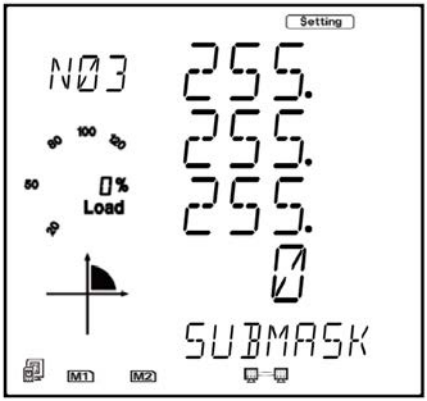
Note: *If the DHCP is selected as Auto, the Ethernet module needs to be rebooted before it can be assigned with the new IP address.*



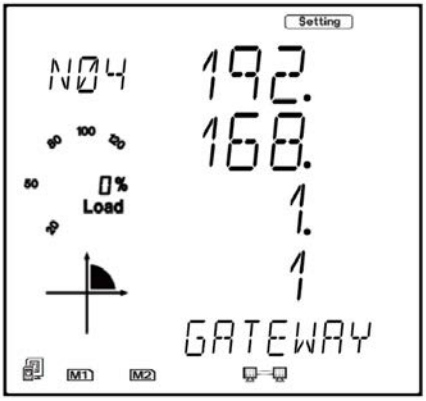
- Press 'P' to get to "N02 IP address" This is the IP address of the meter and will be the IP address to access the web interface of the module. Users can configured the IP address if the DHCP is configured to Manual. Press 'V/A' to configure the IP address. The cursor of the first digit will begin to flash. Press the 'H' button to scroll through the digits, press the 'P' or 'E' to change the value of the flashing cursor and press 'V/A' to confirm.



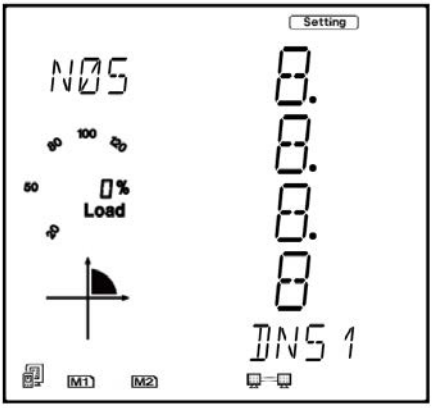
- Press 'P' to get to "N03 Subnet Mask". Press 'V/A' to configure the subnet address. The cursor of the first digit will begin to flash. Press the 'H' button to scroll through the digits, press the 'P' or 'E' to change the value of the flashing cursor and press 'V/A' to confirm.



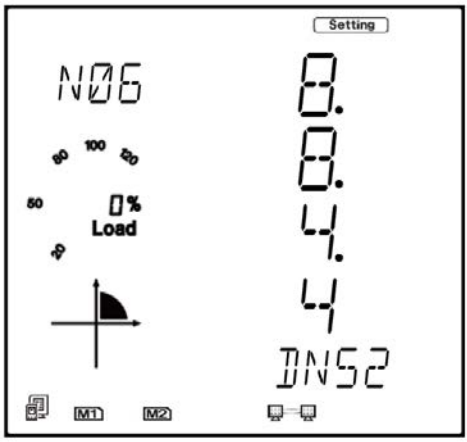
- Press 'P' to get to "N04 Gateway". Press 'V/A' to configure the gateway IP address. The cursor of the first digit will begin to flash. Press the 'H' button to scroll through the digits, press the 'P' or 'E' to change the value of the flashing cursor and press 'V/A' to confirm.



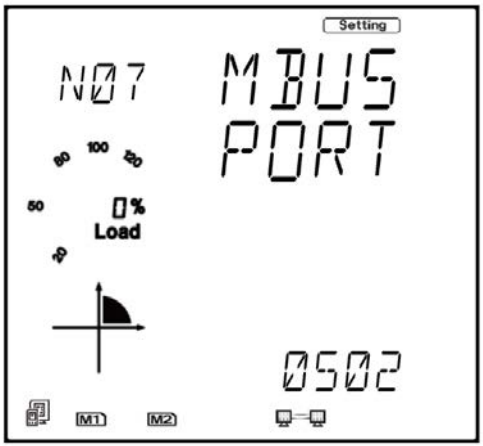
- Press 'P' to get to "N05 DNS Primary Server". Press 'V/A' to configure the DNS address. The cursor of the first digit will begin to flash. Press the 'H' button to scroll through the digits, press the 'P' or 'E' to change the value of the flashing cursor and press 'V/A' to confirm. The DNS parameters must be set correctly to use the SMTP, FTP/HTTP Post and AcuCloud functions.



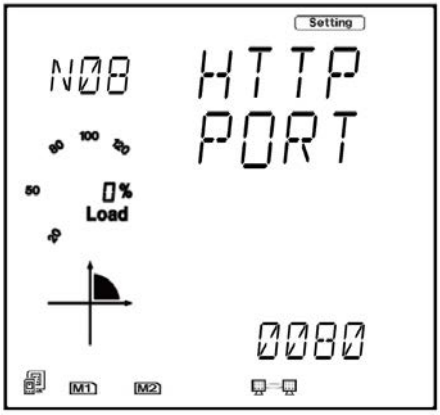
- Press 'P' to get to "N06 DNS Secondary Server". Press 'V/A' to configure the DNS address. The cursor of the first digit will begin to flash. Press the 'H' button to scroll through the digits, press the 'P' or 'E' to change the value of the flashing cursor and press 'V/A' to confirm.



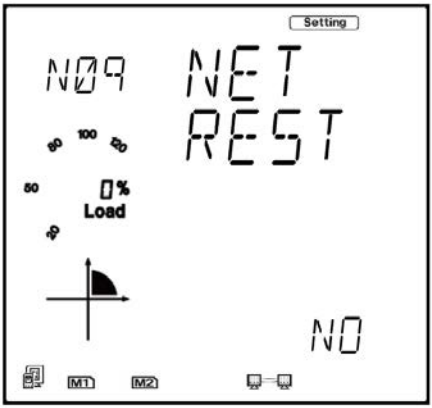
- Press 'P' to get to "N07 Modbus Port". Press 'V/A' to configure the Modbus Port. The cursor of the first digit will begin to flash. Press the 'H' button to scroll through the digits, press the 'P' or 'E' to change the value of the flashing cursor and press 'V/A' to confirm.



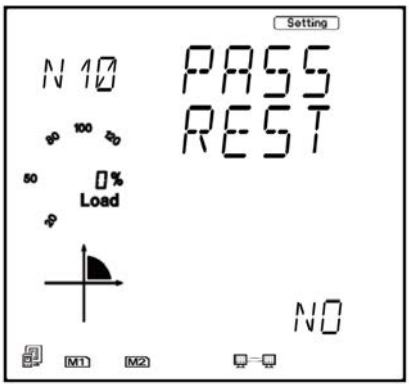
- Press 'P' to get to "N08 HTTP Port". Press 'V/A' to configure the HTTP Port. The cursor of the first digit will begin to flash. Press the 'H' button to scroll through the digits, press the 'P' or 'E' to change the value of the flashing cursor and press 'V/A' to confirm.



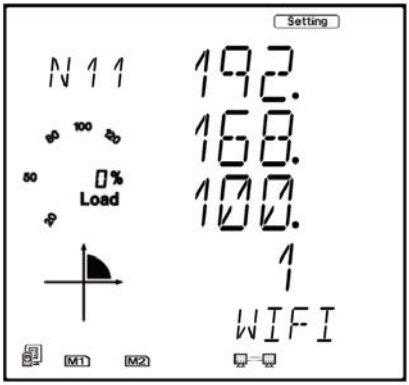
- Press 'P' to get to "N09 NET REST". After making any changes to the NET settings, users must reboot the Ethernet module from this page for the settings to take effect. Press 'V/A' to reboot the module, the cursor will begin to flash. Press the 'P' or 'E' button to change the setting to 'Reset' and press 'V/A' to confirm. The cursor will return to 'No' once successful.



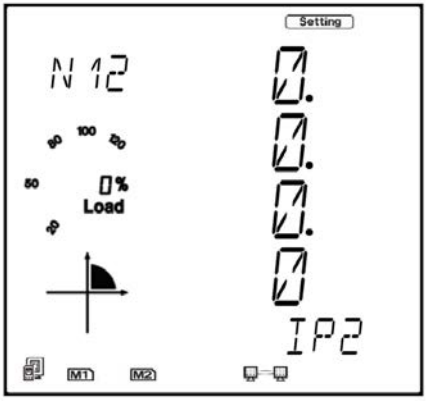
- Press 'P' to get to "N10 PASSREST". Press 'V/A' to configure the password reset. The cursor of the first digit will begin to flash. Press the 'P' or 'E' button to change the setting to 'Reset' and press 'V/A' to confirm. The cursor will return to 'No' once successful.



- Press 'P' to get to "N11 WiFi" This is the IP address of WiFi and will be the IP address to access the web interface of the module by using WiFi connection. Press 'V/A' to configure the IP address. The cursor of the first digit will begin to flash. Press the 'H' button to scroll through the digits, press the 'P' or 'E' to change the value of the flashing cursor and press 'V/A' to confirm.The module will appear in the WiFi network as AXM-WEB2-WIFI-(serial number of module) as the SSID or name of the wireles network.By default, the network key or password will be ''accuenergy''.



- Press 'P' to get to 'N12 IP2'. This is the IP address for Ethernet port 2, it is preset as dynamic DHCP. A new IP address will be assigned to it when it is connected to the internet via Ethernet port 2.



7. Cable

An RJ45 cable is needed to connect the meter to the network. A shielded twisted pair cable(-standard 568A or standard 568B) is recommended as reference to the EIA/TIA standard.

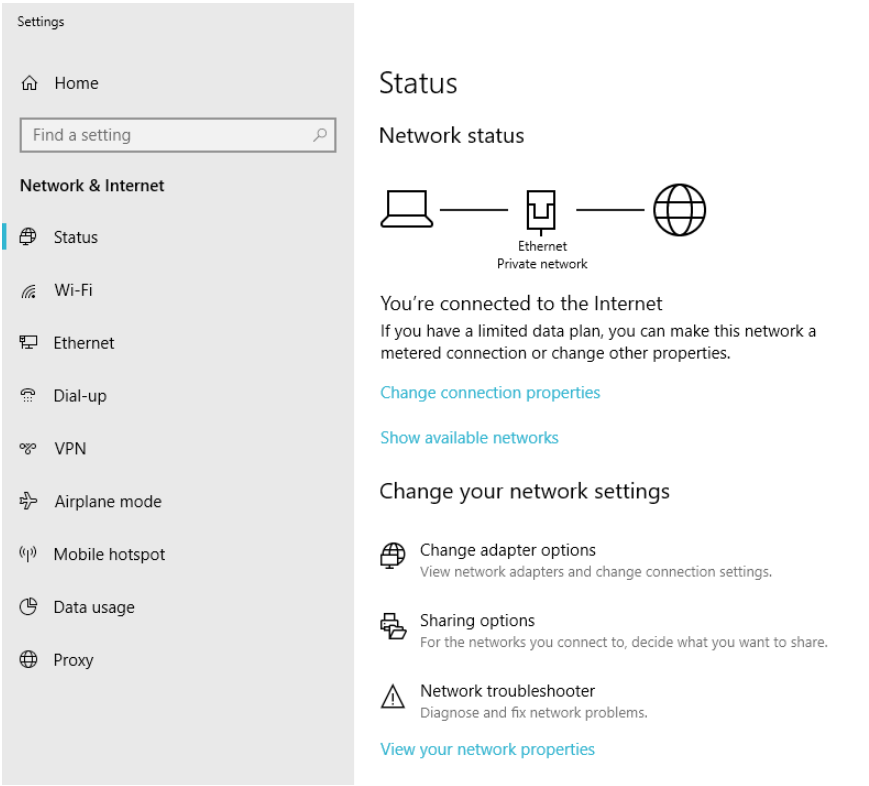
8. Connection Method

8.1 Direct Connect to a Computer

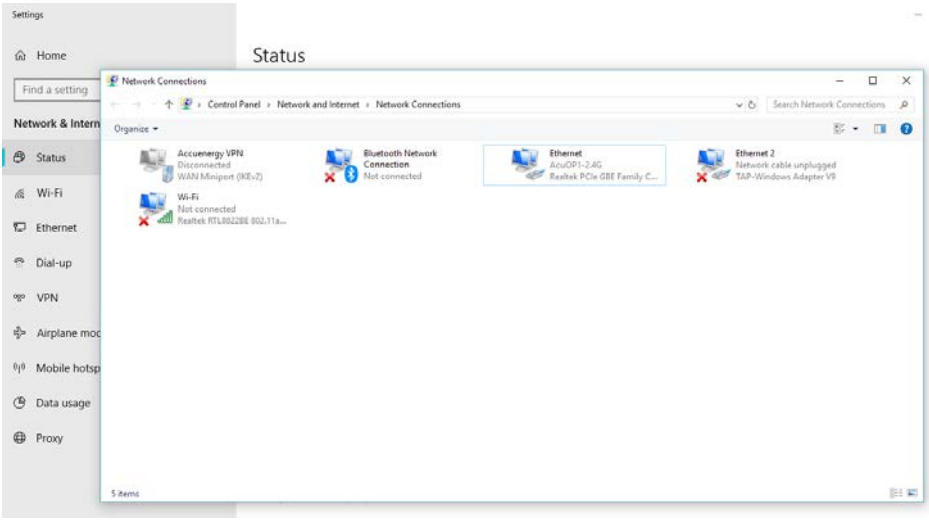
The AXM-WEB2 can be connected to a computer using a crossover cable(standard 568A). The AXM-WEB2 module supports Modbus-TCP and HTTPS Functions for this method of connection.

To connect meter directly to the computer, the following can be done using a computer running the Windows OS:

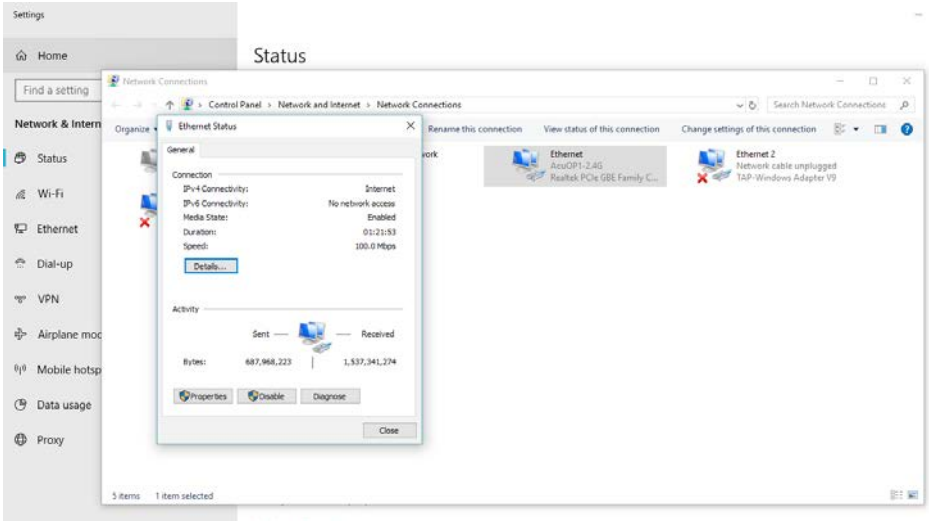
- Manually connect the meter via Ethernet cable to the computer
- Right click on the connection icon
- Select "Open Network Sharing Center"



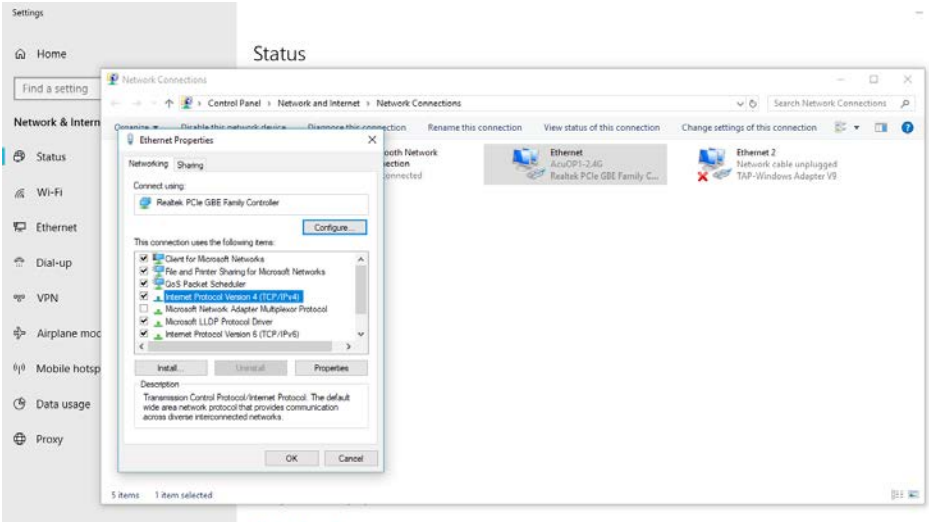
- Click on Change adapter options



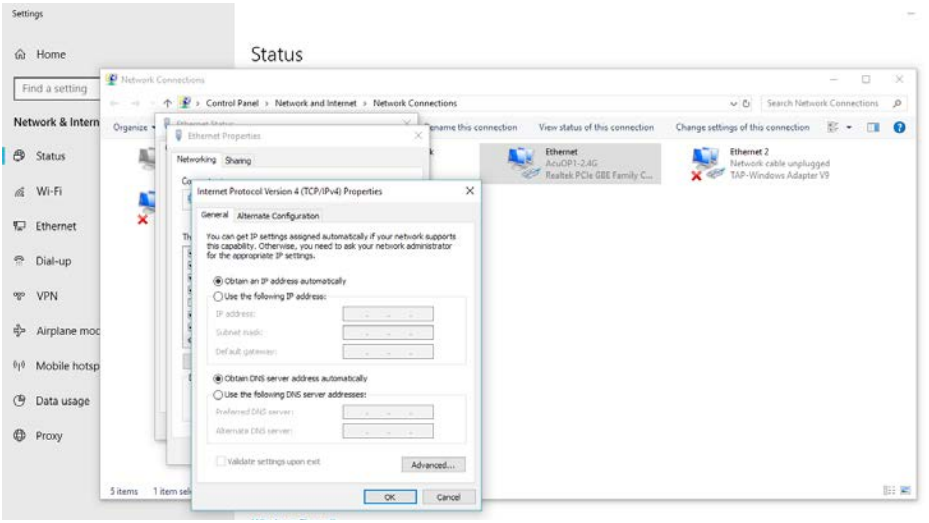
- Once there, right click on the local area connection icon and click properties.



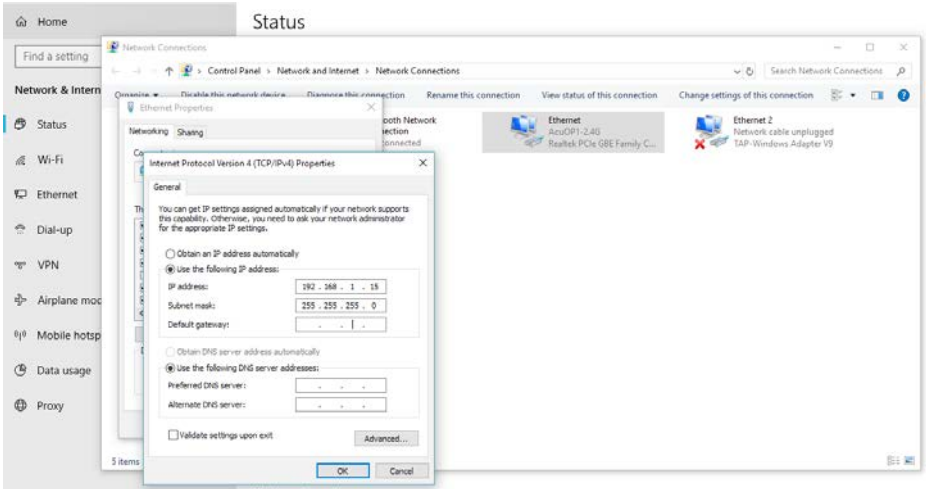
- Select the icon that says Internet Protocol Version 4 TCP/IP



- The Internet Protocol Version 4(TCP/IP) Properties box will pop up



- Click on ''Use the following IP address'' and enter in an IP number so that meter and computer are in the same local network range. For example, if the meter has IP address of 192.168.1.254, then the computer must be assigned with an IP 192.168.1.xxx, where xxx can be any number but cannot be the same as the value the meter has.



- Once you have entered in the IP address, press the Tab key on your keyboard until you hit the bottom and click OK.

- Before selecting the OK button make note of the IP address you have assigned to the meter and then press OK.

8.2 Direct Connect to a Router/Switch

The AXM-WEB2 can be connected to a router or switch using a patch cable. The DHCP can be configured to Auto to have the router assign the meter with an IP address or the DHCP can be configured to Manual to set an IP address using the information in Chapter 5.

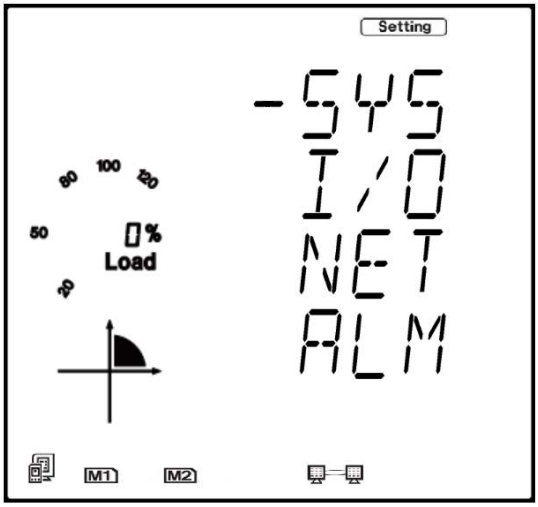
AXM-WEB 2 has two Ethernet ports, Ethernet 1 is set to have the static DHCP, and Ethernet 2 is set to have the dynamic DHCP. Both of the Ethernet ports have the same functionalities, you can use either of them according to the requirement.

8.3 Connect through WiFi

The AXM-WEB2 can be connected through WiFi network. The Acuvim II series meter must first be configured to work with the AXM-WEB2.

Make sure you are in the 'Setting' mode. To get to this screen, press the 'H' and 'V/A' buttons simultaneously; the display selection mode will be activated and the screen should become blank. With the cursor flashing, press either the 'P' or 'E' buttons to move the cursor to 'Setting'. Press 'V/A' to enter the 'Setting' mode.

- You will be required to type in a password in the ‘PASSWORD’ screen. Leave the password as default ‘0000’ and press ‘V/A’ to enter the parameter selection Mode.



- The cursor will be on ‘SYS’. Press ‘V/A’ on this screen to get to the system settings. This will show screen ‘S01 ADDR’.
- Press the 'E' button until you get to 'S34 PROTOCOL 2'. Select the 'WEB2' protocol.
  - Press ‘V/A’ to modify the setting; the cursor should now flash.
  - Press ‘P’ or ‘E’ to select 'WEB2'.
  - Press ‘V/A’ to confirm the change.

The module will appear in the WiFi network as AXM-WEB2-WIFI-(serial number of module) as the SSID or name of the wireles network.By default, the network key or password will be ''accuenergy''.

By default the AXM-WEB2 will be in Access Point mode with default IP address of 192.168.100.1. Ensure the device connecting to the AXM-WEB2 has DHCP enabled or it should be in the same subnet mask as the AXM-WEB2.

- Open a internet browser and type in the IP address of the WIFI module: ***192.168.100.1***
- Log in at Admin access level, using the default password of ***'admin'.***

9. Description of Modbus-TCP Protocol

The Modbus-TCP protocol is used as one of the communication protocols in the AXM-WEB2. The protocol establishes a master and slave connection in Ethernet. The master device(client) first sets up a TCP-IP link with slave device(server). The master device then sends a request to the slave device and the slave device in return sends a response to the master device. Figure below shows how the Modbus-TCP protocol works.

9.1 Protocol

9.1.1 Data Frame Format

MBAP Header	Function	Data
7x8 bits	8-bits	Nx8 bits

9.1.2 Modbus Application Header (MBA Header) Field

Modbus application header field is the start of the data frame, and consists of seven bytes.

MBAP Header	Function	Data
Transaction Identifier	2 Bytes	Identification of a Modbus Request/ Response transaction
Protocol Identifier	2 Bytes	Modbus Protocol = 0
Length	2 Bytes	Number of following bytes
Unit Identifier	1 Byte	Slave address, in the range of 0-247 decimal

9.1.3 Function Field

The function code field of a message frame contains eight bits. Valid codes are in the range of 1-255. When a message is sent from a client to a server device, the function code field tells the server what kinds of action to perform.

Code	Meaning	Data
01	Read Relay Output Status	Obtain current status of Relay Output
02	Read Digital Input (DI) Status	Obtain current status of Digital Input
03	Read Data	Obtain current binary value in one or more registers
05	Control Single Relay Output	Force Relay to a state of ON or OFF
16	Write Multiple Registers	Place specific value into a series of consecutive multiple registers

9.1.4 Data Field

The data field is constructed using sets of two hexadecimal digits, in the range of 00 to FF. The data field of messages sent from a master to slave contains additional information which the slave must use to take the action defined by the function code. This can include information such as the register addresses, the quantity of registers to query and the count of the actual number of data bytes. For example, if the master requests a slave to read a group of holding registers(function code 03), the data field specifies the starting register and how many registers are to be read.

If the master needs to write data(function code 10 hexadecimal) to a group of registers in the slave, the data field specifies the starting register, how many registers to write, the count of data bytes to follow in the data field and the data to be written into the registers.

9.2 Format of communication

9.2.1 Explanation of frame

Transaction identifier hi	Transaction identifier lo	Protocol identifier hi	Protocol identifier lo	Length hi	Length lo	Unit identifier
00H	00H	00H	00H	00H	06H	01H

Function Code	Data start register hi	Data start register lo	Data # of registers hi	Data # of registers lo
03H	40H	00H	00H	48H

The meaning of each abbreviated field above is:

Transaction identifier hi: High byte of transaction identifier

Transaction identifier lo: Low byte of transaction identifier

Protocol identifier hi: High byte of protocol identifier

Protocol identifier low: Low byte of protocol identifier

Length hi: High byte of length

Length lo: Low byte of length

Unit identifier: Slave address

Fun: Function code

Data start register hi: High byte of starting register address

Data start register lo: Low byte of starting register address

Data #of registers hi: High byte of number of registers

Data #of registers lo: Low byte of number of registers

9.2.2 Read Status of Relay (Function code 01)

Function Code 1

This function code is used to read the relay output status in the Acuvim II series meter.

1=On 0=Off

There are 8 relay outputs in the Acuvim II series meter and they start at address 0000H.

The following query is to read 2 relay output status of the Acuvim II series address 1.

Query

Transaction identifier hi	Transaction identifier lo	Protocol identifier hi	Protocol identifier lo	Length hi	Length lo	Unit identifier
00H	00H	00H	00H	00H	06H	01H

Fun	Data start register hi	Data start register lo	Data # of registers hi	Data # of registers lo
01H	00H	00H	00H	02H

Response

The Acuvim II series meter responds back with the MBAP header, function code, quantity of data bytes and the data.

An example of response to read the status of the first 2 relay outputs starting at 0000H is shown below. The status of relay output 1 and 2 is corresponds to the last 2 bits of data.

Relay 1: bit0 Relay 2: bit1

Transaction identifier hi	Transaction identifier lo	Protocol identifier hi	Protocol identifier lo	Length hi	Length lo	Unit identifier
00H	00H	00H	00H	00H	04H	01H

Fun	Byte count	Data
01H	01H	02H

The content of the data is,

7	6	5	4	3	2	1	0
0	0	0	0	0	0	1	0

MSB LSB

(Relay 1 = OFF, Relay 2 = ON)

2) Read Status of DI(Function Code 02)

1=On 0=Off

There are 28 DIs in the Acuvim II series meter starting at address 0000H.

The following query is to read 4 DI statuses of AXM-IO1 module with logic address of 1 in the Acuvim II series meter.

Query

Transaction identifier hi	Transaction identifier lo	Protocol identifier hi	Protocol identifier lo	Length hi	Length lo	Unit identifier
00H	00H	00H	00H	00H	06H	01H

Fun	Data start register hi	Data start register lo	Data # of registers hi	Data # of registers lo
02H	00H	00H	00H	04H

Response

The response includes the MBAP header, function code, quantity of data characters and the data.

An example response from the meter to read the status of 4 DIs(DI1-On, DI2=On, DI3=On, DI4=On) is shown below. The status of each corresponds to the last 4 bits of the data.

DI1: bit0 DI2: bit1 DI3: bit2 DI4: bit3

Transaction identifier hi	Transaction identifier lo	Protocol identifier hi	Protocol identifier lo	Length hi	Length lo	Unit identifier
00H	00H	00H	00H	00H	04H	01H

Fun	Byte count	Data
02H	01H	0FH

The content of the data is,

7	6	5	4	3	2	1	0
0	0	0	0	1	1	1	1

MSB LSB

3) Read Data (Function Code 03)

Query

This function allows the user to obtain the measurement results of the Acuvim II series meter.

Below is an example to read 6 registers corresponding to the device clock of the meter, starting at 1040H.

Transaction identifier hi	Transaction identifier lo	Protocol identifier hi	Protocol identifier lo	Length hi	Length lo	Unit identifier
00H	00H	00H	00H	00H	06H	01H

Fun	Data start reg hi	Data start reg lo	Data #of reg hi	Data #of reg lo
03H	10H	40H	00H	06H

An example response is provided to read the time (2006-12-18 14:15:20).

Transaction identifier hi	Transaction identifier lo	Protocol identifier hi	Protocol identifier lo	Length hi	Length lo	Unit identifier
00H	00H	00H	00H	00H	0FH	01H

Fun	Byte count	Data1 hi	Data1 lo	Data2 hi	Data2 lo	Data3 hi	Data3 lo	Data4 hi	Data4 lo	Data5 hi	Data5 lo	Data6 hi	Data6 lo
03H	0CH	07H	D6H	00H	0CH	00H	12H	00H	0EH	00H	0FH	00H	14H

4) Control Relay(Function Code05)

Query

This function code enables the control of a single relay output in the Acuvim II series meter. Any relay output in the Acuvim II series meter can be controlled on or off starting at 0000H.

Sending the data 'FF00H' will set they relay output on and sending '0000H' will turn it off; all other values are illegal and will not affect they relay output status.

The example below is a request to a Acuvim II series meter to turn on relay output 1.

Transaction identifier hi	Transaction identifier lo	Protocol identifier hi	Protocol identifier lo	Length hi	Length lo	Unit identifier
00H	00H	00H	00H	00H	06H	01H

Fun	Data start reg hi	Data start reg lo	Data #of reg hi	Data #of reg lo
05H	00H	00H	FFH	00H

Response

The normal response to the command request is to retransmit the message as received after the relay output status has been altered.

Transaction identifier hi	Transaction identifier lo	Protocol identifier hi	Protocol identifier lo	Length hi	Length lo	Unit identifier
00H	00H	00H	00H	00H	06H	01H

Fun	Data start reg hi	Data start reg lo	Data #of reg hi	Data #of reg lo
05H	00H	00H	FFH	00H

5) Preset/Reset Multi-Register (Function Code 16)

Query

This function code allows the user to modify the contents of a register. The example below is a request to an Acuvim II series meter with device address 1 to preset the CT1(500) and CT2(5) registers. The CT1 data address is 1008H and CT2 is at 1009H.

Transaction identifier hi	Transaction identifier lo	Protocol identifier hi	Protocol identifier lo	Length hi	Length lo	Unit identifier
00H	00H	00H	00H	00H	0BH	01H

Fun	Data start reg hi	Data start reg lo	Data #of reg hi	Data #of reg lo	Byte count	Value1 hi	Value1 lo	Value2 hi	Value2 lo
10H	10H	08H	00H	02H	04H	01H	F4H	00H	05H

Response

The normal response to a preset Multi-Register request including the MBAP Header, function code, data start register and the number of registers is shown below.

Transaction identifier hi	Transaction identifier lo	Protoco-lidentifier hi	Protocol identifier lo	Length hi	Length lo	Unit identifier
00H	00H	00H	00H	00H	06H	01H

Fun	Data start reg hi	Data start reg lo	Data #of reg hi	Data #of reg lo
10H	10H	08H	00H	02H

10. Web Interface Readings and Parameter Settings

The AXM-WEB2 module supports the HTTPS protocol to allow for the use of a web interface. The user will need to visit access the AXM-WEB2 web interface to configure the module and use its functions. The web interface allows for remote initial setup of the Acuvim II meter.

The AXM-WEB2 web interface allows for different user access levels.

To access the web interface the IP address for the WEB2(either Ethernet1, Ethernet2 or WiFi) needs to be known.

10.1 User Access Login

Enter the correct IP address of the module in the search bar of the internet browser to access the web interface of the AXM-WEB2

The user will be redirected to a web page prompting to select the Access Level and enter appropriate password for that level.

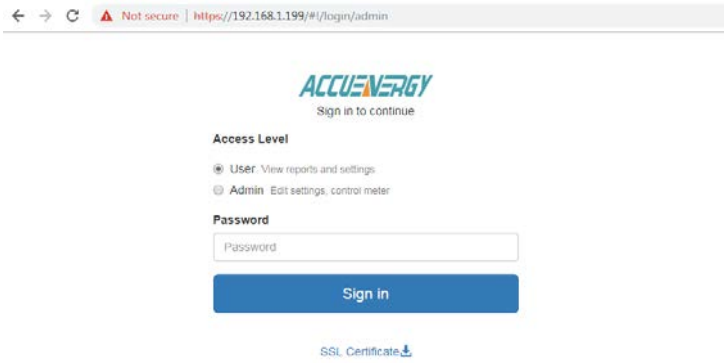
The User level is ideal for users who need only to take readings and view status from the meter.

The default password for the User level is '**view**'.

It is recommended that no more than 5 users are logged in at the same time for this level to ensure optimal performance of web interface.

The Admin level is ideal for users who need access to configurations on the meter or the web interface and to view readings.

The default password for the Admin level is '**admin**'.



The two different access levels are summarized below:

Access Level	Default Password	Read Parameter/Status	Configure Settings
User	view	Yes	No
Admin	admin	Yes	Yes

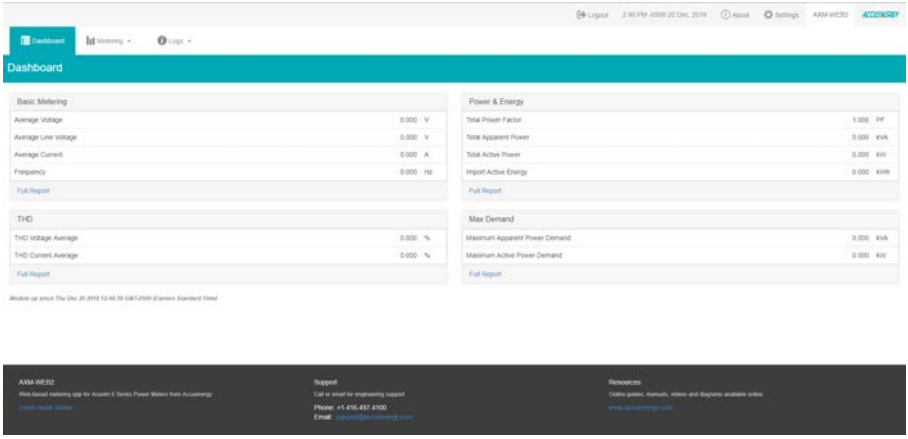
10.2 Dashboard

In the dashboard, the user will find the tabs to access different pages in the web interface such as 'Metering', 'Logs', and 'Settings'.The dashboard is the first page the user will see once they have entered the correct password for the appropriate access level. The dashboard is the same for both access levels.

The dashboard displays selected parameters from the different groups of metering parameters such as "Basic Metering", "Power & Energy", 'THD' and "Max Demand". Clicking on "Full report" under any one of these four metering parameter groups will take the user to the web page which contains all the parameters supported by that metering parameter group.

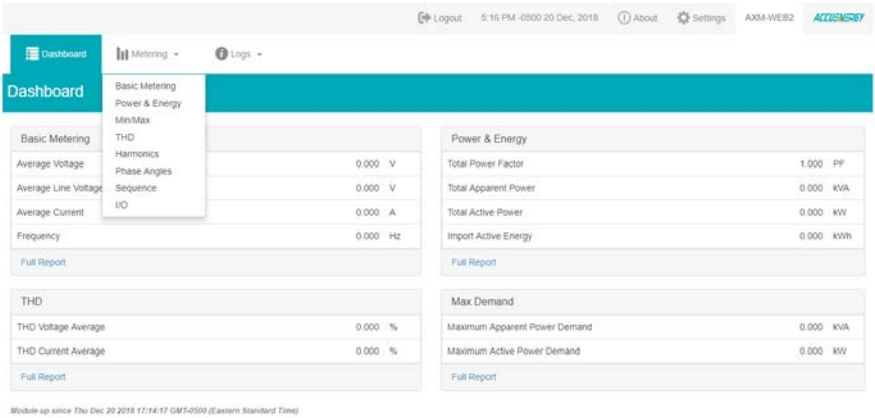
The dashboard also displays how long the AXM-WEB2 module has been connected to the network since the last reboot of the module in the bottom let corner of the page.

The parameters on this page are updated every 5 sec.



10.3 Metering web page

Click on the 'Metering' tab to visit the metering data web pages. There are eight kinds of metering parameter web pages. They are "Basic Metering", "Power & Energy", "Min/Max", 'THD', 'Harmonics', "Phase Angles", ''Sequence'' and ''I/O''. Each web page shows data from the Acuvim II series meter.

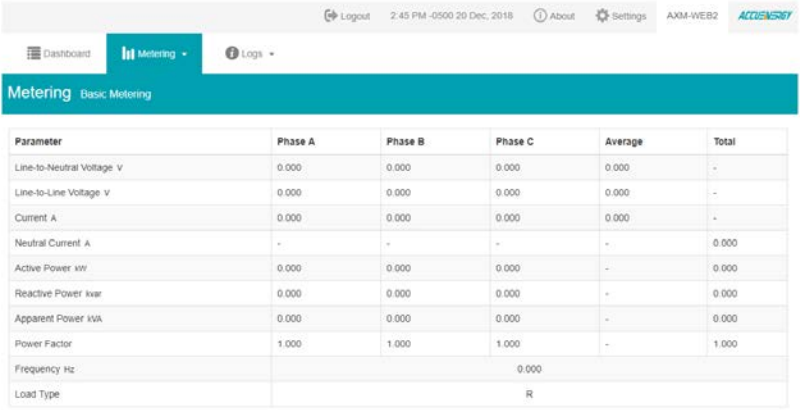


Basic Metering

The Basic Metering webpage includes the data of real-time parameters for the Acuvim II series meter. This includes the Line Voltages, Phase Voltages, Current, Neutral Current, Active, Reactive and Apparent Power, Power Factor, Frequency and Load type.

The parameters on this page are updated every 1 sec.

The values displayed in this webpage will depend on the wiring configuration mode of the meter. For example, if the meter is configured as '2LL' or '3LL' then the metering webpage will not display the phase readings, only the total values will be shown.



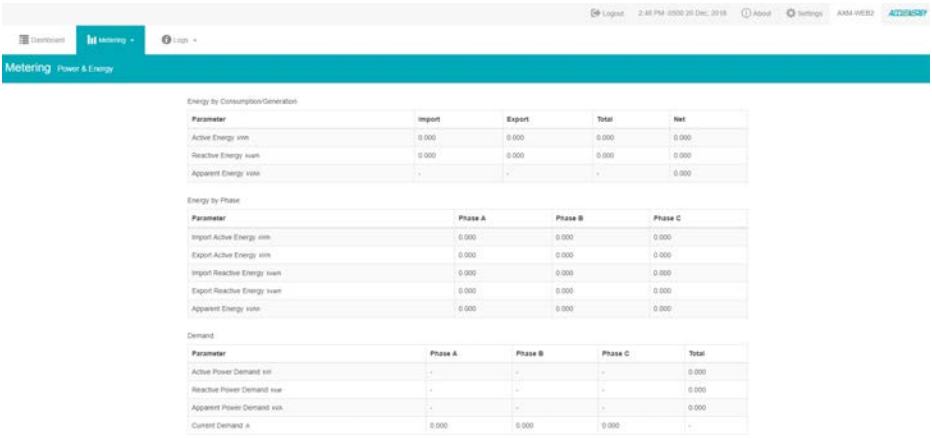
Parameter	Phase A	Phase B	Phase C	Average	Total
Line-to-Neutral Voltage V	0.000	0.000	0.000	0.000	-
Line-to-Line Voltage V	0.000	0.000	0.000	0.000	-
Current A	0.000	0.000	0.000	0.000	-
Neutral Current A	-	-	-	-	0.000
Active Power kW	0.000	0.000	0.000	-	0.000
Reactive Power kvar	0.000	0.000	0.000	-	0.000
Apparent Power kVA	0.000	0.000	0.000	-	0.000
Power Factor	1.000	1.000	1.000	-	1.000
Frequency Hz	0.000				
Load Type	R				

Power & Energy

The Power & Energy webpage shows the energy data for the Acuvim II series meter such as the Active and Reactive energy that is consumed and delivered as well as the Apparent energy per phase and total.

This webpage also shows the Demand parameters for the Active, Reactive and Apparent Power as well as the three phase Current demands.

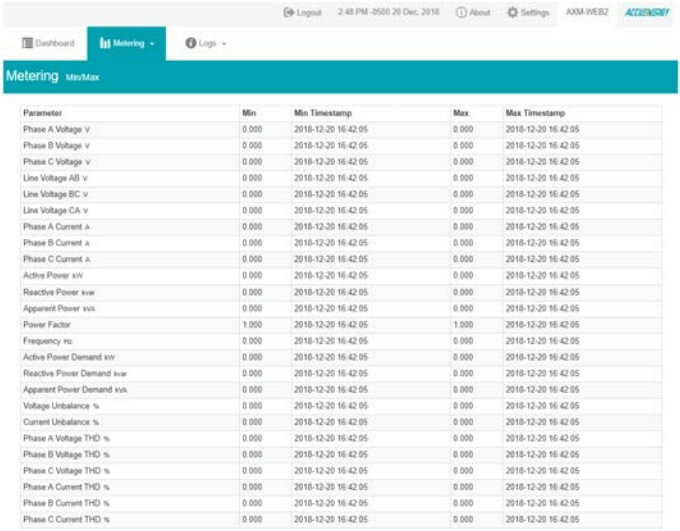
The parameters in this webpage are updated every 5 sec.



Min/Max

The Min/Max page shows the maximum and minimum statistics that the meter has records since the life time of the meter or from the last reset of the min/max statistics as well as the timestamps they were recorded at.

The parameters in this web page are updated every 10 sec.

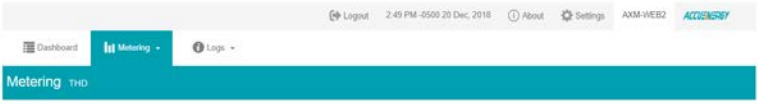


Parameter	Min	Min Timestamp	Max	Max Timestamp
Phase A Voltage V	0.000	2018-12-20 16:42:05	0.000	2018-12-20 16:42:05
Phase B Voltage V	0.000	2018-12-20 16:42:05	0.000	2018-12-20 16:42:05
Phase C Voltage V	0.000	2018-12-20 16:42:05	0.000	2018-12-20 16:42:05
Line Voltage AB V	0.000	2018-12-20 16:42:05	0.000	2018-12-20 16:42:05
Line Voltage BC V	0.000	2018-12-20 16:42:05	0.000	2018-12-20 16:42:05
Line Voltage CA V	0.000	2018-12-20 16:42:05	0.000	2018-12-20 16:42:05
Phase A Current A	0.000	2018-12-20 16:42:05	0.000	2018-12-20 16:42:05
Phase B Current A	0.000	2018-12-20 16:42:05	0.000	2018-12-20 16:42:05
Phase C Current A	0.000	2018-12-20 16:42:05	0.000	2018-12-20 16:42:05
Active Power kW	0.000	2018-12-20 16:42:05	0.000	2018-12-20 16:42:05
Reactive Power kvar	0.000	2018-12-20 16:42:05	0.000	2018-12-20 16:42:05
Apparent Power kVA	0.000	2018-12-20 16:42:05	0.000	2018-12-20 16:42:05
Power Factor	1.000	2018-12-20 16:42:05	1.000	2018-12-20 16:42:05
Frequency Hz	0.000	2018-12-20 16:42:05	0.000	2018-12-20 16:42:05
Active Power Demand kW	0.000	2018-12-20 16:42:05	0.000	2018-12-20 16:42:05
Reactive Power Demand kvar	0.000	2018-12-20 16:42:05	0.000	2018-12-20 16:42:05
Apparent Power Demand kVA	0.000	2018-12-20 16:42:05	0.000	2018-12-20 16:42:05
Voltage Unbalance %	0.000	2018-12-20 16:42:05	0.000	2018-12-20 16:42:05
Current Unbalance %	0.000	2018-12-20 16:42:05	0.000	2018-12-20 16:42:05
Phase A Voltage THD %	0.000	2018-12-20 16:42:05	0.000	2018-12-20 16:42:05
Phase B Voltage THD %	0.000	2018-12-20 16:42:05	0.000	2018-12-20 16:42:05
Phase C Voltage THD %	0.000	2018-12-20 16:42:05	0.000	2018-12-20 16:42:05
Phase A Current THD %	0.000	2018-12-20 16:42:05	0.000	2018-12-20 16:42:05
Phase B Current THD %	0.000	2018-12-20 16:42:05	0.000	2018-12-20 16:42:05
Phase C Current THD %	0.000	2018-12-20 16:42:05	0.000	2018-12-20 16:42:05

THD

The THD web page shows the power quality data such as the THD, THFF, Crest and K Factor for both the voltage and current.

The parameters in this web page are updated every 15 sec.



Parameter	Phase A	Phase B	Phase C
THD Voltage %	0.000	0.000	0.000
THD Current %	0.000	0.000	0.000
THD Odd Line Voltage %	0.000	0.000	0.000
THD Even Line Voltage %	0.000	0.000	0.000
Crest Factor Line Voltage	0.000	0.000	0.000
THFF Line Voltage %	0.000	0.000	0.000
THD Odd Current %	0.000	0.000	0.000
THD Even Current %	0.000	0.000	0.000
K Factor Current	0.000	0.000	0.000

Harmonics

The Harmonics web page will show the harmonics of the voltage and the current waveform being measured. It will display the harmonics of each phase in graphical and tabular format. Select between voltage and current to view their respective harmonics as well as between 2nd - 31st harmonics or 32nd - 63rd from the drop down list.

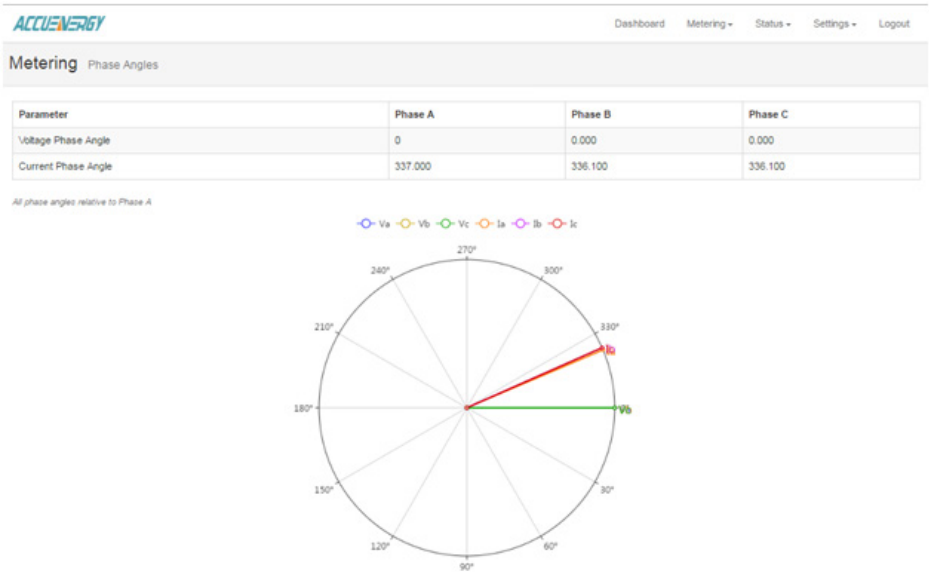
The parameters in this web page are updated every 15 sec.

Harmonic	Phase A	Phase B	Phase C
2	0.000	0.000	0.000
3	1.500	1.610	1.590
4	0.000	0.000	0.000
5	1.420	1.600	1.630
6	0.000	0.000	0.000
7	0.930	0.980	0.960
8	0.000	0.000	0.000
9	0.690	0.670	0.710
10	0.000	0.000	0.000
11	0.000	0.000	0.000
12	0.000	0.000	0.000
13	0.450	0.450	0.400
14	0.000	0.000	0.000
15	0.000	0.000	0.000
16	0.000	0.000	0.000
17	0.000	0.000	0.000
18	0.000	0.000	0.000
19	0.000	0.000	0.000
20	0.000	0.000	0.000
21	0.000	0.000	0.000
22	0.000	0.000	0.000
23	0.000	0.000	0.000
24	0.000	0.000	0.000
25	0.000	0.000	0.000
26	0.000	0.000	0.000
27	0.000	0.000	0.000

Phase Angles

The Phase Angles web page will show the phase angles of the voltage and current waveform being measured which can be used for remote troubleshooting. This page provides a visual diagram of the phase angles with respect to the voltage connected to the Phase A voltage input.

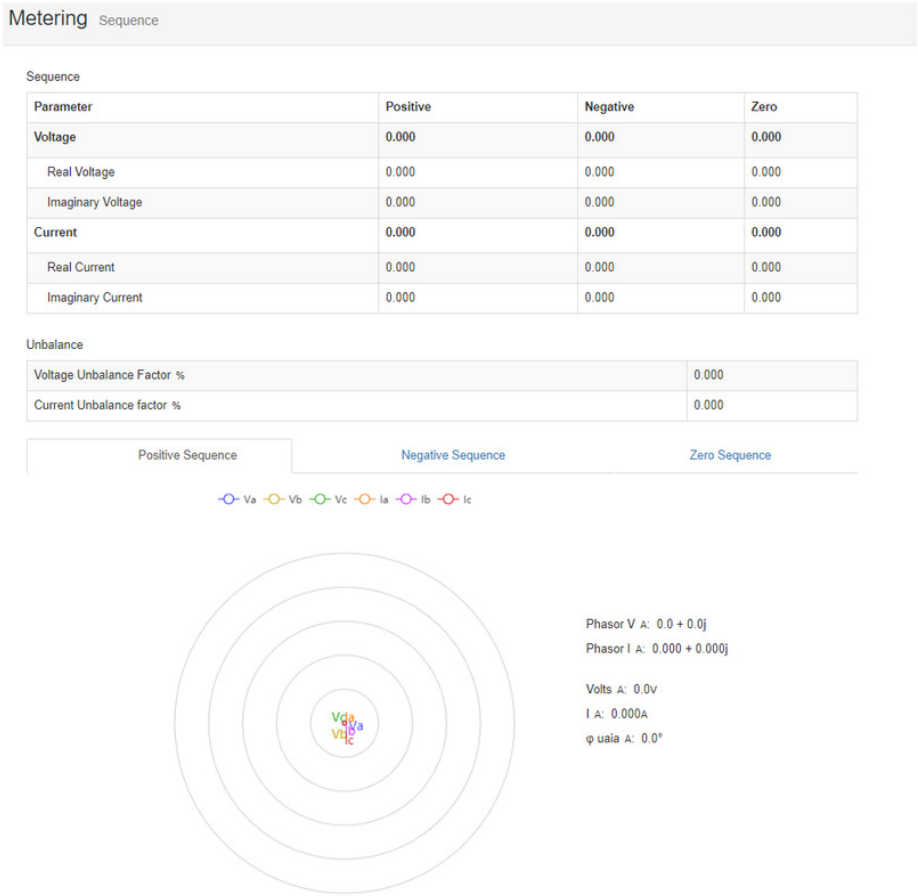
The parameters in this web page are updated every 10 sec.



Sequence

The Sequence web page will show the positive, negative and zero components of the voltage and current waveform being measured.

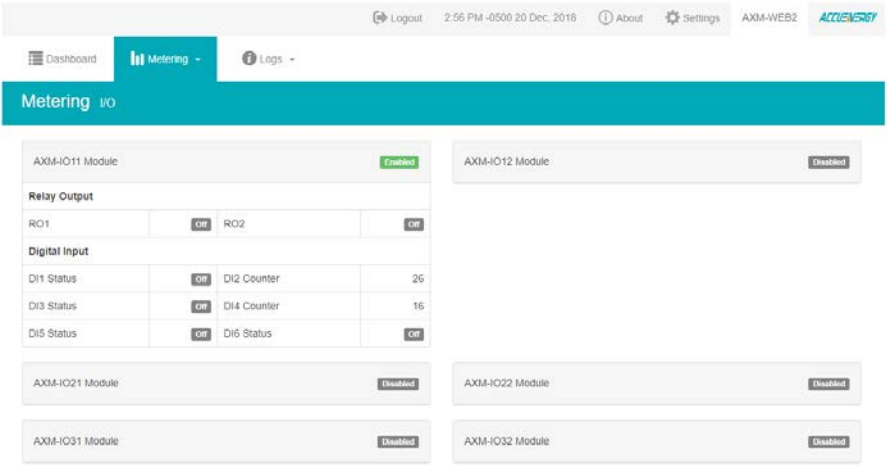
The parameters in this web page are updated every 10 sec.



I/O

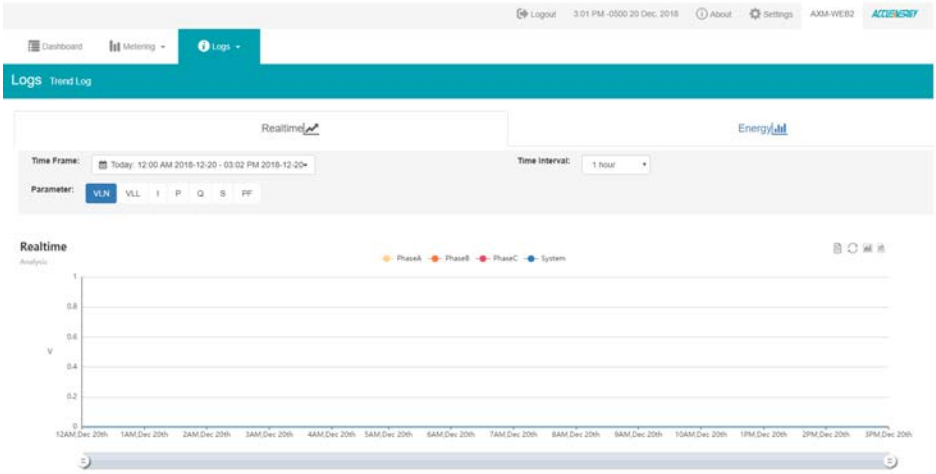
The I/O web page displays the status of the I/O modules that are connected and their values depending on the model of the module that is connected to the meter. I.E. The AXM-IO11 module will display the Relay Output status(on/off), DI status/counter. The I/O module can be configured by using our software Acuview.

The parameters in this web page are updated every 5 sec.



10.4 Logs

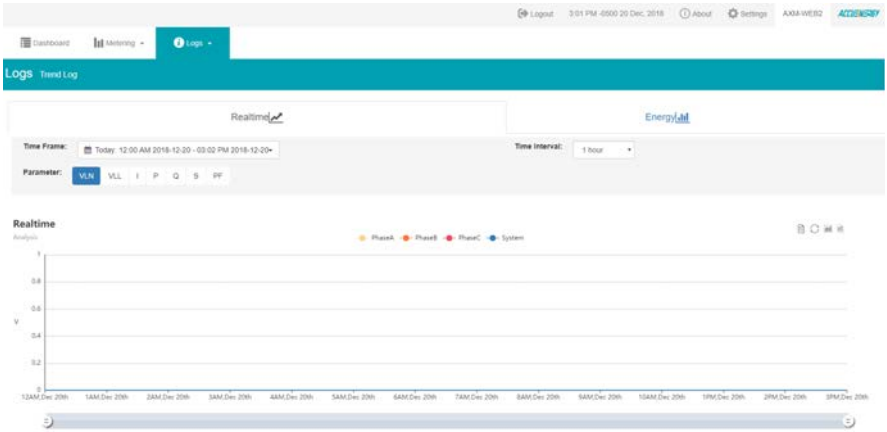
Click on the 'Logs' tab to visit the metering logs web pages. There are five kinds of logs that can be viewed, they are "Trend Log", "Data Log", "Alarm Log", "SOE Log" and "Waveform Log"(Only available in AcuVim IIW model). Each web page shows data from the Acuvim II series meter.



Trendlog

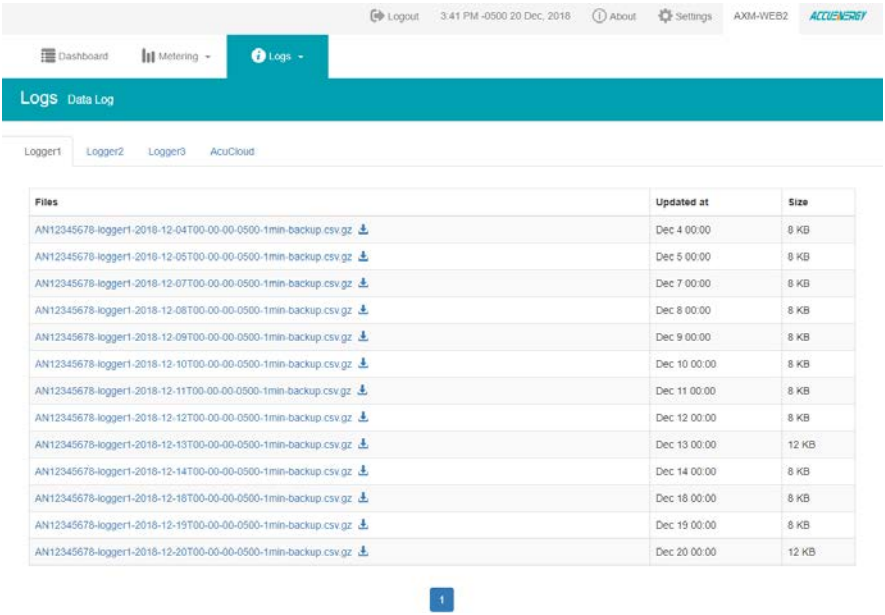
The TrendLog web page includes the realtime and energy trend diagram. The realtime trendlog diagram can be selected to show the phase voltage, line voltage,current, active power, reactive power, apparent power and power factor for each phase. The energy trendlog can show the imported and exported active energy, reactive energy, total energy, net energy and apparent energy.

The data of the trendlog can be previewed and downloaded as a csv file by clicking the 'Data Review' and 'Data' icons on the right top side of the diagram. The trendlog diagram can also be saved as an image by clicking the 'Image' icon.



Data Log

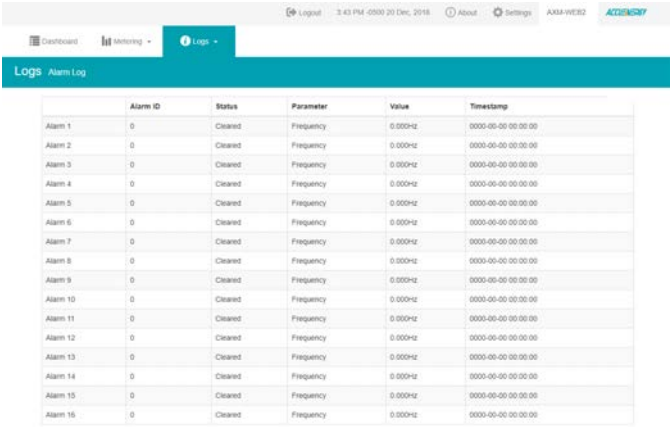
The data log web page includes all the data file for three different loggers and Acucloud. You can select the different loggers by clicking the logger tab. After the logger is selected, the log file for this logger will show on the screen with the update time and file size. To download the file, click on the download icon to save the file in the computer. The data log will be saved as a .csv file.



Alarm Log

The Alarm Log web page shows the alarm log of the meter. It will show the status of up to 16 alarm events indicating the alarm ID, status, parameter, value and timestamp of the alarm event.

Once all 16 alarm events are full, the newest alarm event will then wrap around to alarm 1. The parameters in the alarm status web page are updated every 10 seconds.

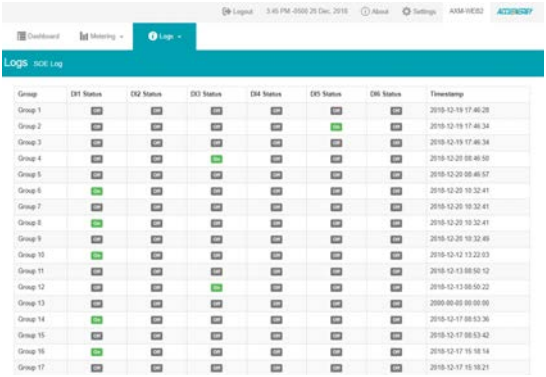


	Alarm ID	Status	Parameter	Value	Timestamp
Alarm 1	0	Cleared	Frequency	0.000Hz	0000-00-00 00:00:00
Alarm 2	0	Cleared	Frequency	0.000Hz	0000-00-00 00:00:00
Alarm 3	0	Cleared	Frequency	0.000Hz	0000-00-00 00:00:00
Alarm 4	0	Cleared	Frequency	0.000Hz	0000-00-00 00:00:00
Alarm 5	0	Cleared	Frequency	0.000Hz	0000-00-00 00:00:00
Alarm 6	0	Cleared	Frequency	0.000Hz	0000-00-00 00:00:00
Alarm 7	0	Cleared	Frequency	0.000Hz	0000-00-00 00:00:00
Alarm 8	0	Cleared	Frequency	0.000Hz	0000-00-00 00:00:00
Alarm 9	0	Cleared	Frequency	0.000Hz	0000-00-00 00:00:00
Alarm 10	0	Cleared	Frequency	0.000Hz	0000-00-00 00:00:00
Alarm 11	0	Cleared	Frequency	0.000Hz	0000-00-00 00:00:00
Alarm 12	0	Cleared	Frequency	0.000Hz	0000-00-00 00:00:00
Alarm 13	0	Cleared	Frequency	0.000Hz	0000-00-00 00:00:00
Alarm 14	0	Cleared	Frequency	0.000Hz	0000-00-00 00:00:00
Alarm 15	0	Cleared	Frequency	0.000Hz	0000-00-00 00:00:00
Alarm 16	0	Cleared	Frequency	0.000Hz	0000-00-00 00:00:00

SOE Log

The SOE web page will display the Sequence of Event log for the enabled I/O module that is attached to the Acuvim II series meter with timestamps. It will display the DI status for up to 20 events.

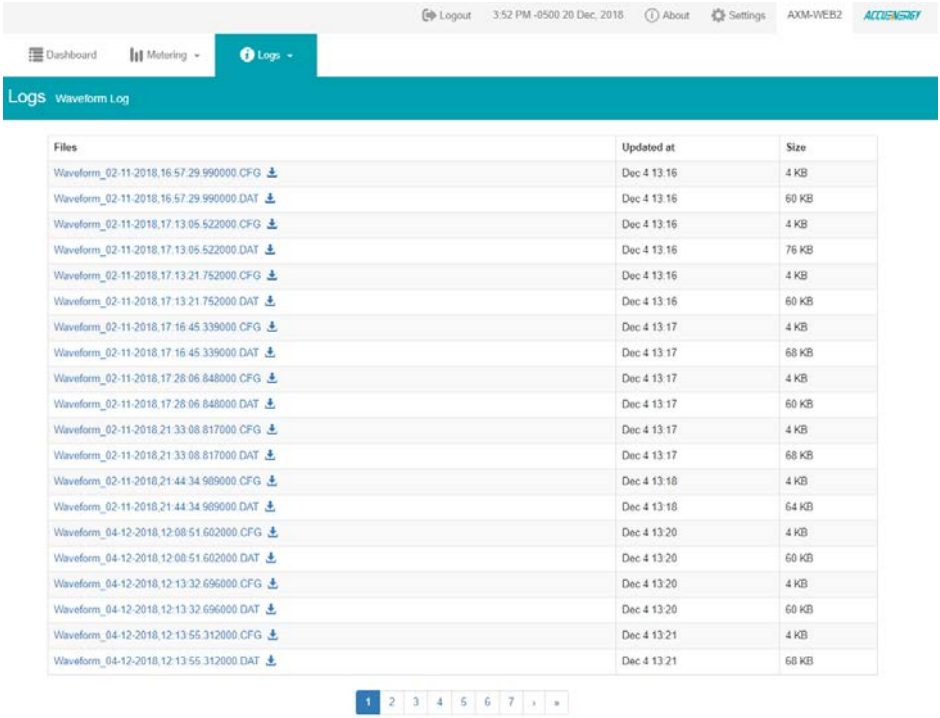
The parameters in this web page are updated every 10 sec.



Group	DI1 Status	DI2 Status	DI3 Status	DI4 Status	DI5 Status	DI6 Status	Timestamp
Group 1	OFF	OFF	OFF	OFF	OFF	OFF	2018-12-19 17:46:28
Group 2	OFF	OFF	OFF	OFF	ON	OFF	2018-12-19 17:46:34
Group 3	OFF	OFF	OFF	OFF	OFF	OFF	2018-12-19 17:46:34
Group 4	OFF	OFF	ON	OFF	OFF	OFF	2018-12-20 08:46:50
Group 5	OFF	OFF	OFF	OFF	OFF	OFF	2018-12-20 08:46:57
Group 6	ON	OFF	OFF	OFF	OFF	OFF	2018-12-20 10:32:41
Group 7	OFF	OFF	OFF	OFF	OFF	OFF	2018-12-20 10:32:41
Group 8	ON	OFF	OFF	OFF	OFF	OFF	2018-12-20 10:32:41
Group 9	OFF	OFF	OFF	OFF	OFF	OFF	2018-12-20 10:32:49
Group 10	ON	OFF	OFF	OFF	OFF	OFF	2018-12-12 13:22:03
Group 11	OFF	OFF	OFF	OFF	OFF	OFF	2018-12-13 08:50:12
Group 12	OFF	OFF	ON	OFF	OFF	OFF	2018-12-13 08:50:22
Group 13	OFF	OFF	OFF	OFF	OFF	OFF	2000-00-00 00:00:00
Group 14	ON	OFF	OFF	OFF	OFF	OFF	2018-12-17 08:53:36
Group 15	OFF	OFF	OFF	OFF	OFF	OFF	2018-12-17 08:53:42
Group 16	ON	OFF	OFF	OFF	OFF	OFF	2018-12-17 15:18:14
Group 17	OFF	OFF	OFF	OFF	OFF	OFF	2018-12-17 15:18:21

Waveform Log

The waveform log web page includes all the waveform data files. All the waveform log file will show on the screen with the update time and file size. To download the file, click on the download icon to save the file in the computer. The waveform data log will be saved as a DAT file.

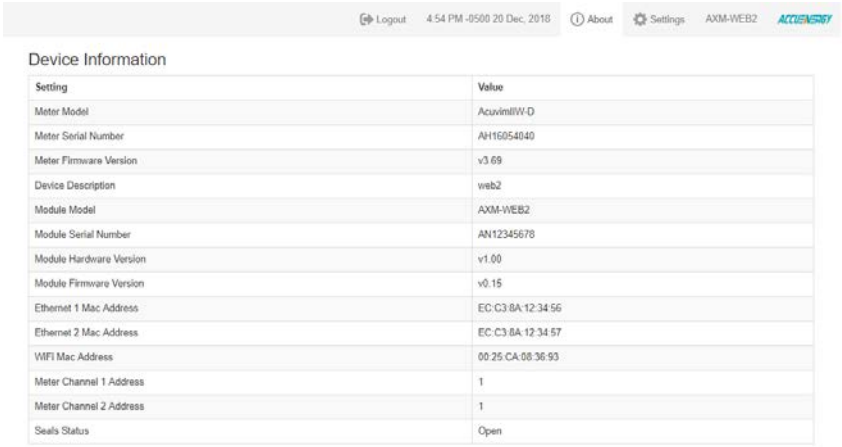


Files	Updated at	Size
Waveform_02-11-2018,16.57.29.990000.CFG	Dec 4 13:16	4 KB
Waveform_02-11-2018,16.57.29.990000.DAT	Dec 4 13:16	60 KB
Waveform_02-11-2018,17.13.05.522000.CFG	Dec 4 13:16	4 KB
Waveform_02-11-2018,17.13.05.522000.DAT	Dec 4 13:16	76 KB
Waveform_02-11-2018,17.13.21.752000.CFG	Dec 4 13:16	4 KB
Waveform_02-11-2018,17.13.21.752000.DAT	Dec 4 13:16	60 KB
Waveform_02-11-2018,17.16.45.339000.CFG	Dec 4 13:17	4 KB
Waveform_02-11-2018,17.16.45.339000.DAT	Dec 4 13:17	68 KB
Waveform_02-11-2018,17.28.06.848000.CFG	Dec 4 13:17	4 KB
Waveform_02-11-2018,17.28.06.848000.DAT	Dec 4 13:17	60 KB
Waveform_02-11-2018,21.33.08.817000.CFG	Dec 4 13:17	4 KB
Waveform_02-11-2018,21.33.08.817000.DAT	Dec 4 13:17	68 KB
Waveform_02-11-2018,21.44.34.989000.CFG	Dec 4 13:18	4 KB
Waveform_02-11-2018,21.44.34.989000.DAT	Dec 4 13:18	64 KB
Waveform_04-12-2018,12.08.51.602000.CFG	Dec 4 13:20	4 KB
Waveform_04-12-2018,12.08.51.602000.DAT	Dec 4 13:20	60 KB
Waveform_04-12-2018,12.13.32.696000.CFG	Dec 4 13:20	4 KB
Waveform_04-12-2018,12.13.32.696000.DAT	Dec 4 13:20	60 KB
Waveform_04-12-2018,12.13.55.312000.CFG	Dec 4 13:21	4 KB
Waveform_04-12-2018,12.13.55.312000.DAT	Dec 4 13:21	68 KB

1 2 3 4 5 6 7 › »

10.5 About

The About page provides users with information about the Acuvim II series meter and AXM-WEB2 module. This page contains the model of the Acuvim II meter, serial number, firmware version and the meter addresses. The device information page also contains the serial number, firmware version, hardware version and the MAC addresses of the AXM-WEB2 module.



10.6 Setting

Meter

The basic metering configurations needed to set up the meter can be applied from the web interface by clicking on Settings and selecting Meter.

Device Description: A description for the meter can be provided in this field which will display on the Dashboard page.

Voltage Wiring: Select the type of wiring that the meter will be monitoring from the modes in the drop down list.

Current Wiring: Select the number of CT's that will be connected to the meter to measure the current.

PT1: Enter the rated input of the potential transformer that is connected to the meter. Possible range is from 50 to 1,000,000V.

CT1: Enter the rated input of the current transformer that is used with the meter. Possible ranges for the CT1 are from 1 to 50000A.

PT2: Enter the rated output of the potential transformer. Possible range is from 50 to 400V.

CT2: Select the rated output of the current transformer from the drop down list. By default this setting is already configured.

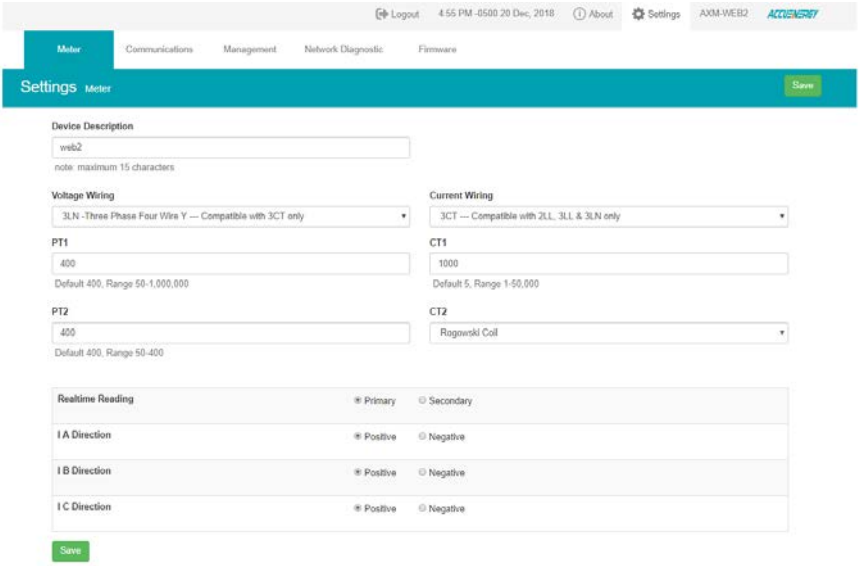
Real time Reading: Select the mode of the readings for the meter when it is polled through Modbus. By default the meter is in Secondary mode which will require some parameters to be scaled by a relationship. Configuring the meter in Primary mode does not require any scaling.

I A Direction: Represents the flow of direction for the Phase A current being measured, configure this setting to troubleshoot issues related to incorrect polarity of readings such as real power, Power Factor and etc.

I B Direction: Represents the flow of direction for the Phase B current being measured, configure this setting to troubleshoot issues related to incorrect polarity of readings such as real power, Power Factor and etc.

I C Direction: Represents the flow of direction for the Phase C current being measured, configure this setting to troubleshoot issues related to incorrect polarity of readings such as real power, Power Factor and etc.

Click 'Save' after changing any settings.



Communications

The communication setting web page will allow the user to configure settings related to the Ethernet networks and the Wireless network. The functions that the AXM-WEB-PUSH2 supports can be configured from this web page by selecting the corresponding tab such as Emails, Time/Date , Datalog, AcuCloud Post for communicating with the AcuCloud software, BACnet-IP, SNMP and DNP3.

Network

The first page the user will see after selecting the Communications option under the Settings tab is the Network page.

The settings for the Ethernet port are as followed:

Ethernet 1 DHCP: Select 'Manual' to manually configure the IP address to access the meter. If set to 'Manual', you'll also need to set the Subnet Mask and Gateway. By default the IP address for ETH1 will be 192.168.1.254

Select 'Auto' to have the meter assigned a IP address automatically. With this selection the Subnet Mask, and Gateway will also be automatically assigned.

Note: After changing DHCP to Auto, check the display of the meter (N02 NET Settings) to obtain the new IP address that has been assigned after the AXM-WEB-PUSH2 has completed its reboot and the router has assigned the meter with an IP address.

IP Address: If the DHCP is configured to Manual, the IP address can be configured from this page.

Subnet Mask: If the DHCP is configured to Manual, the Subnet Mask can be configured from this page.

Gateway: If the DHCP is configured to Manual, the Gateway can be configured from this web page.

The status of the Ethernet 1 port will display if it is connected or disconnected.

Ethernet 2 DHCP: Select 'Manual' to manually configure the IP address to access the meter. If set to 'Manual', you'll also need to set the Subnet Mask and Gateway. By default the IP address for ETH2 will be set to Auto DHCP. Tf configured to Manual it will have the IP address of 192.168.1.253.

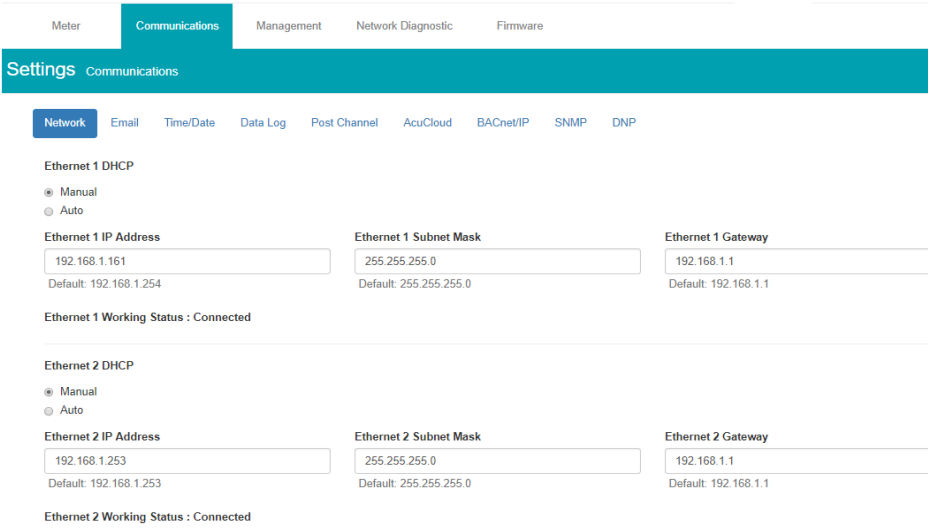
Note: The IP address of the Ethernet 2 can be found page N12 of the NET Settings.

IP Address: *By default the IP address is configured by DHCP, this field will be grayed out. If the DHCP is configured to Manual, the IP address can be configured from this page.*

Subnet Mask: If the DHCP is configured to Manual, the Subnet Mask can be configured from this page.

Gateway: If the DHCP is configured to Manual, the Gateway can be configured from this web page.

The status of the Ethernet 2 port will display if it is connected or disconnected.



WiFi Enabled: Select the Enable or Disable communication through WiFi.

WiFi Mode: The WiFi can be configured to work in two modes just like any other WIFI device. It can be configured as either Access Point(AP) or Station mode.

Access Point: Default configuration for AXM-WEB2. The AXM-WEB2 will act as a wireless access point and will allow a wireless device to access the AXM-WEB2.

- In Access Point mode, users can configure the SSID, Network Key and IP of the AXM-WEB2 module as well as the DHCP DNS servers.

Station: AXM-WEB2 will behave like a wireless client and bridge to another wireless network that is available.

- In Station mode, users can select the Wireless network to connect to under the "Connect to SSID" setting. Click on "Select from Available Networks" and enter the Network Key for the wireless network that the AXM-WEB2 will bridge to.

In station Mode the DHCP can configured as either manual or auto.

- If manual, users can configure the IP, Subnet Mask and Gateway and DNS Servers.
- If auto, users can check the meter's display to get the IP address and all other network configurations assigned by the wireless network. The user can also configure the DNS servers in DHCP is on Auto.

Note: *The WiFi IP address for the AXM-WEB2 will be in parameter N11 of the NET settings.*

DHCP DNS Server 1: Enter the address of the DNS server 1 in this field.

DHCP DNS Server 2: Enter the address of the DNS server 2 in this field.

HTTPS Port: Enter the HTTPS port number of the meter. By default, this setting is configured to 443. The range can be from 6000 to 9999.

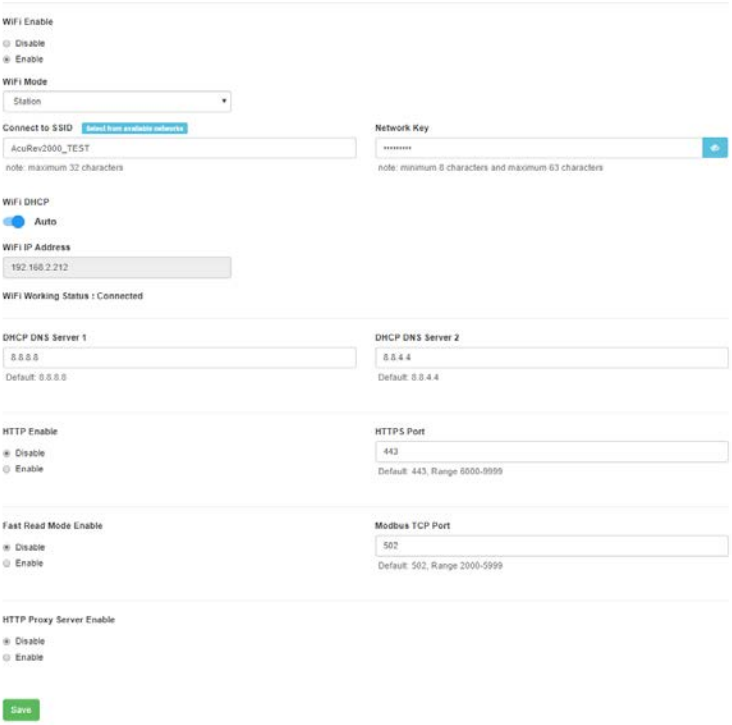
Note: This setting should never be configured to 80. Enable the HTTP Enable configuration to access the web interface at port 80.

Modbus TCP Port: Enter the Modbus port number of the meter. By default, this setting is configured to 502. The range can be from 2000 to 5999.

Fast Read Mode Enable: Select enable the web interface to read the meters real time parameters at 100ms

Proxy Server Enable: Select enable to allow for forwarding of data log files to pass through the Proxy server first and then the data post server. IE. AcuCloud.

Click 'Save' after changing any settings. Users will be prompted to reboot the AXM-WEB2 immediately or later. If later is chosen the AXM-WEB2 will need to be rebooted from the 'Management' page.



Email

The AXM-WEB2 supports the SMTP protocol so users can setup the email function on the AXM-WEB2 to enable the meter to send emails based on a time interval or when there is an alarm or SOE event or a combination of both. Users must know their SMTP server provider and details regarding their SMTP server, which can be provided by users' IT personal.

There are three modes available for sending emails that the user can enable. The first mode is "Triggered Sending" where emails are sent immediately when there is a new alarm or SOE event. The second mode is "Timed Sending". Users can receive emails at a certain period of time based on the time interval configured and the email will include the data that is selected to be sent. The third mode is when both of the above are enabled.

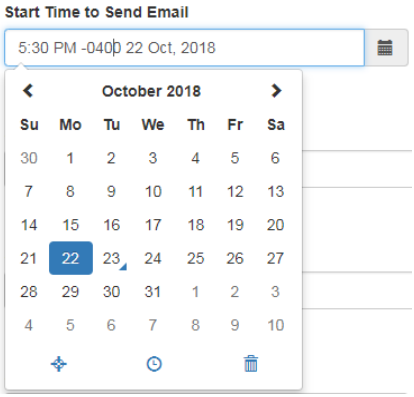
Users can configure the mail function for their needs by clicking on the 'Settings' tab and selecting 'Communications'. Once redirected to the Communications web page, select 'Email'.

To use this function the following settings need to be configured:

SMTP Enabled: Select 'Enable' to enable and to further configure the settings related to the SMTP function.

Start Time to Send Email: Select the date and time for when the emails should begin to send.

- Click on the icon on the bottom left that looks like compass with 4 quadrants to sync the time to the computers time.
- Click on the icon in the middle to manually adjust the time and date.
- Click on the icon in the bottom right to clear the time and date.



SMTP Server: Enter the URL of a valid SMTP server. I.E. mail.accuenergy.com or smtp.gmail.com

SMTP Port: Enter the port number associated with the SMTP server.

SMTP From: Enter a name or phrase which will appear to let you know who the mail is from. I.E. 'Technical Support'

SMTP Username: Enter the SMTP user name for the SMTP server set above.

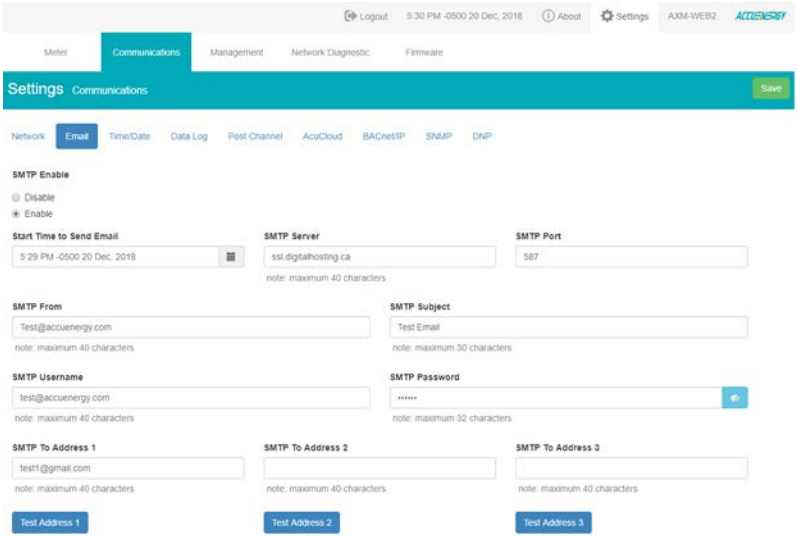
SMTP Password: Enter the SMTP user password for the user set above.

SMTP To Address 1;2;3: Enter up to three recipients that you wish to have the email sent to in 'SMTP To Address 1', 'SMTP To Address 2' and 'SMTP To Address 3'.

Test Address 1,2,3: Test the if the email can be sent to 'SMTP To Address 1', 'SMTP To Address 2', 'SMTP To Address 3'.

After configuring the above settings, the next step is to select the content for the emails.

NOTE: Click the Test Address button only after clicking Save and rebooting the module



The content of the emails can either be time based triggered or event based triggered.

For receiving emails on a time based under Enable Periodic Email Reporting:

Enter a time between 5-1440 mins in the Set time interval

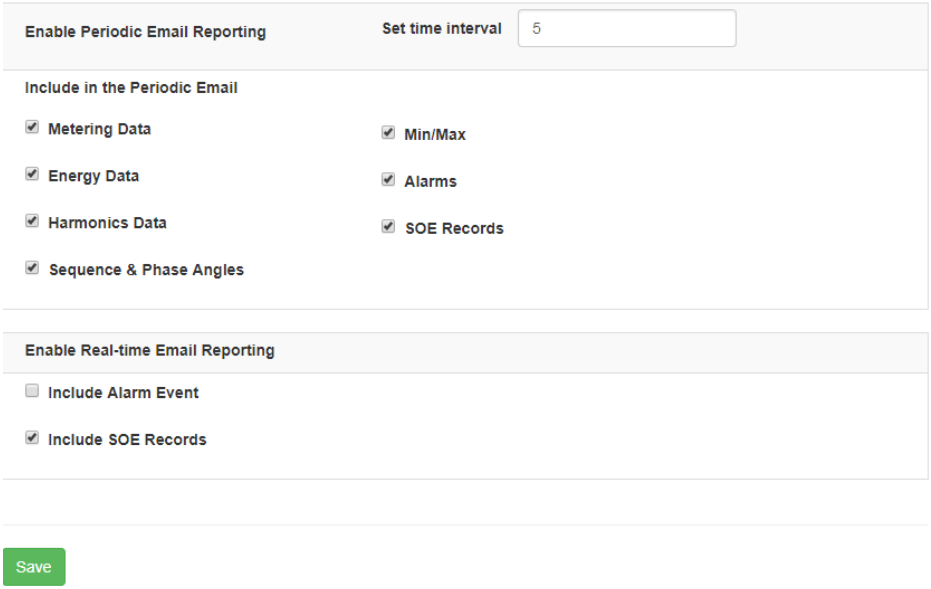
- Check off the box beside the parameters for the content the user should receive.
  - ***Metering Data:*** Report on Real-time voltage, current, power and etc.
  - ***Energy Data:*** Report on energy parameters.
  - ***Harmonics Data:*** Report on the voltage and current harmonics from 2nd to 63rd.
  - ***Sequence & Phase Angles:*** Report on the positive, negative and zero components of the voltage and current waveform.
  - ***Min/Max:*** Report on the maximum and minimum statistics that the meter has recorded since the lifetime of the meter or from the last reset of the min/max statistics.
  - ***Alarm:*** Report of the alarm log.
  - ***SOE Record:*** Report of the SOE log.
  - ***Waveform:*** Report of the waveform log.

The user should receive a email with csv file attachment.

For receiving emails on a event based select either Alarm Event or SOE Record from under the Enable Real-time Email Reporting.

The user should receive a email with csv file attachment corresponding to the alarm log or SOE log.

Click 'Save' after changing any settings. Users will be prompted to reboot the AXM-WEB2 immediately or later. If later is chosen the AXM-WEB2 will need to be rebooted from the 'Management' page.



Time/Date

The device clock of the Acuvim II series meter can be set through the web interface of the AXM-WEB2 module. The AXM-WEB2 module also supports the SNTP (Simple Network Time Protocol) protocol so that the module can update the meter's device clock by synchronizing with a time server.

The AXM-WEB2 can sync with up to 3 time servers. If a time server is down, the module will synchronize with the second or third time server if they are configured.

The settings for the time and date can be found by clicking on the 'Settings' tab and selecting 'Communications'. Click 'Time/Date' to access the web page.

NTP Enabled: Select 'Yes' to enable and to further configure the settings related to the NTP(-Network Time Protocol) function

Device Clock: Configure the date and time on the meter

- Click on the icon on the bottom left that looks like compass with 4 quadrants to sync the time to the computers time.
- Click on the icon in the middle to manually adjust the time and date.
- Click on the icon in the bottom right to clear the time and date.

Sync Time: *Click on Force Update to have the AXM-WEB2 sync its time with the NTP server*

NTP Server 1;2;3: Enter up to 3 SNTP servers in the "SNTP Server 1", "SNTP Server 2" and "SNTP Server 3" fields.

Examples of North American SNTP servers are:

0.us.pool.ntp.org

1.us.pool.ntp.org

2.us.pool.ntp.org

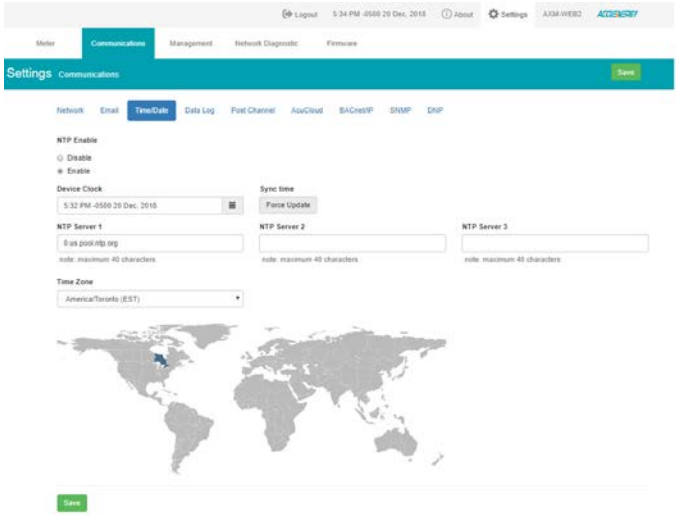
3.us.pool.ntp.org

For more NTP servers based on region, visit the following site:

http://www.pool.ntp.org/en/

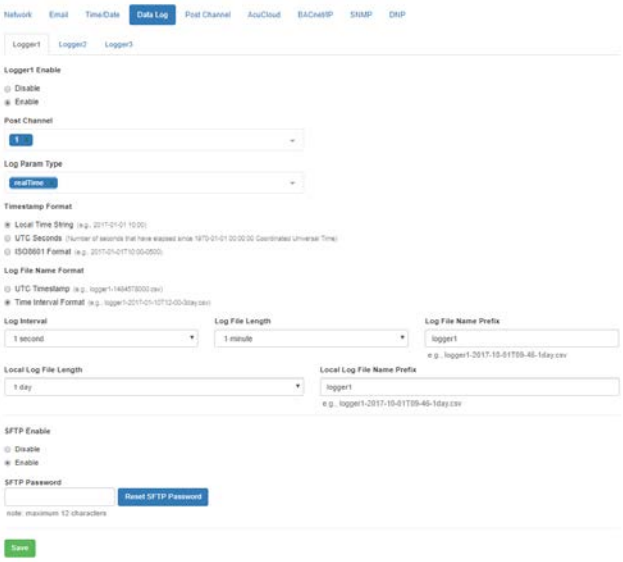
Time Zone: Select the time zone the meter is in or the time zone in which you would like the meter's time to be synchronized to from the drop down list.

Click 'Save' after changing any settings. Users will be prompted to reboot the AXM-WEB-PUSH immediately or later. If later is chosen the AXM-WEB-PUSH will need to be rebooted from the 'Management' page.



Data Log

The AXM-WEB2 supports logging data onto its memory. AXM-WEB2 supports three loggers for different parameters and requirement. The data can be downloaded as a .csv file from the data-log page or using a HTTP/FTP client.



Logger Enable: To use the data log function to log the data onto the module, select 'Enable' to view and configure the settings that are applicable.

Post Channel: Select the channel to push the datalog to.Only the enabled post channel can be selected here.

Log Param Type: Select the parameter type to log into this logger. Parameter types include real-time readings, energy readings, demand readings, power quality readings and I/O readings.

Timestamp Format: Select the format of the timestamp for the data that is logged. The format for the timestamp can be based on the Local Time, UTC Seconds or based on ISO8601 Format.

Log File Name Format: Select the format of the log file name for the data that is logged. The format for the log file name can be based on the UTC timestamp or based on Time Interval Format.

Log Interval: Select how frequently the meter will log data to the file that will be uploaded to the server from the drop down list. The logging interval can be from 1 second to 1 month. The minimum time interval option is according to the selected parameter.

- The Real-time & IO's min Log Interval is 1 sec
- The Energy's min Log Interval is 15 sec
- The Demand & Power Quality's min Log Interval is 1 min

Note: If selected parameters are Real-time and I/O, the min log interval is 1 sec. If selected parameters are Real-time and Energy, the min log interval is 15 sec.

Post File Length: Select how frequently the log file will be uploaded to the server from the drop down list The log file length can be from 1 minute to 1 month.

Log File Name Prefix: Provide a name for the log file posted to post channel which will be appended to the beginning of the log file if "Time Interval Format" is selected as the Post File Name Format. By default "logger1" will be appended to the beginning of the log file.

Local Log File Length: Select the length of the local log file as 1 day, 7 days or 1 month of data from the drop down list.

Local Log File Name Prefix: Provide a name for the local log file which will be appended to the beginning of the log file if "Time Interval Format" is selected as the Post File Name Format. By default "logger1" will be appended to the beginning of the log file.

SFTP Enable: To download the logged data from the module using a FTP client, select Enable. The log file will then be available to be downloaded using a FTP client using the following credentials:

Host: *sftp://IPaddressofthemeter*

Username: *sftpuser*

SFTP Password: *accuenergy*

Port: *22*

By default the password for retrieving the backup log files is 'accuenergy'. The user can configure any password or can reset to the default of accuenergy by clicking on the "Reset SFTP Password".

NOTE: *After enabling the SFTP function the user must reboot the communication module in order to access the data logs with the default password of 'accuenergy'.*

Click 'Save' after changing any settings. Users will be prompted to reboot the AXM-WEB2 immediately or later. If later is chosen the AXM-WEB2 will need to be rebooted from the 'Management' page.

Post Channel

The AXM-WEB2 supports the HTTP and FTP Post functions to send data from the meter to a HTTP/FTP server. The AXM-WEB2 can post .csv files to three different HTTP or FTP servers using HTTP Post or FTP Post.

In the case when there is no connection to the server, the AXM-WEB2 will store the posts and send it out after the connection is restored. Maximum 3000 files will be buffered on module. Clear Post Channel X Logs button will clear the buffered files on meter.

The AXM-WEB2 can post data to a server at intervals of time ranging from 1 minute to 1 month.

The settings for configuring the post channels to post the data can be found by clicking on the 'Settings' tab and selecting 'Communications'. Click "Post Channels" to configure any of the three post channels.

Post Channel 1 Enable: *Enable the Post Channel 1 in order to configure the settings needed to post data via the HTTP(S)/FTP post functions*

Post Method: *Select the method for posting the files, the user can choose HTTP/HTTPS or FTP*

Post Name Fixed: *This configuration needs to be enabled in order for user to control the name of the file that will be posted. Otherwise file name will be based on the Log File Name Format configuration from the Data Log settings*

Post File Name: *User can enter a name for the file that will be posted as if Post Name Fixed is enabled*

If the HTTP/HTTPs post method is selected:

HTTP/HTTPS URL: Enter the URL for the HTTP/HTTPS server. The URL needs to begin with the prefix http:// (https:///)

HTTP/HTTPS Port: Enter the port number the server will be listening on

HTTP/HTTPS Meter ID: Enter a name or description for the meter to be identified on the server

If the FTP post method is selected:

FTP URL: Enter the URL for the FTP server. The URL needs to begin with the prefix ftp://

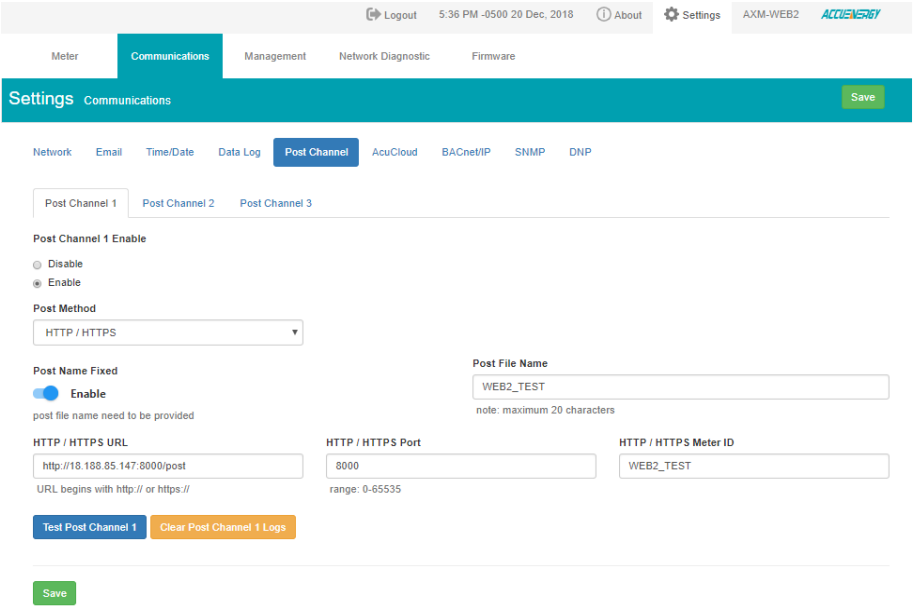
FTP Port: Enter the port number the server will be listening on

FTP Username: Enter the username required to log into the FTP server

FTP Password: Enter the password required to log into the FTP server

Note: The "TEST Post Channel 1" button should only be utilized after clicking the 'Save' button otherwise a fail response will be observed. If a fail response occurs after clicking 'Save' confirm the network settings or credentials for the server.

Click 'Save' after changing any settings. Users will be prompted to reboot the AXM-WEB2 immediately or later. If later is chosen the AXM-WEB2 will need to be rebooted from the 'Management' page.



Select the Post Channel 2 tab to configure the settings for post to a second server.

Post Channel 2 Enable: Enable the Post Channel 2 in order to configure the settings needed to post data via the HTTP(S)/FTP post functions

Post Method: Select the method for posting the files, the user can choose HTTP/HTTPS or FTP

Post Name Fixed: This configuration needs to be enabled in order for user to control the name of the file that will be posted. Otherwise file name will be based on the Log File Name Format configuration from the Data Log settings

Post File Name: User can enter a name for the file that will be posted as if Post Name Fixed is enabled

If the HTTP/HTTPs post method is selected:

HTTP/HTTPS URL: Enter the URL for the HTTP/HTTPS server. The URL needs to begin with the prefix http:// (https://)

HTTP/HTTPS Port: Enter the port number the server will be listening on

HTTP/HTTPS Meter ID: Enter a name or description for the meter to be identified on the server

If the FTP post method is selected:

FTP URL: Enter the URL for the FTP server. The URL needs to begin with the prefix ftp://

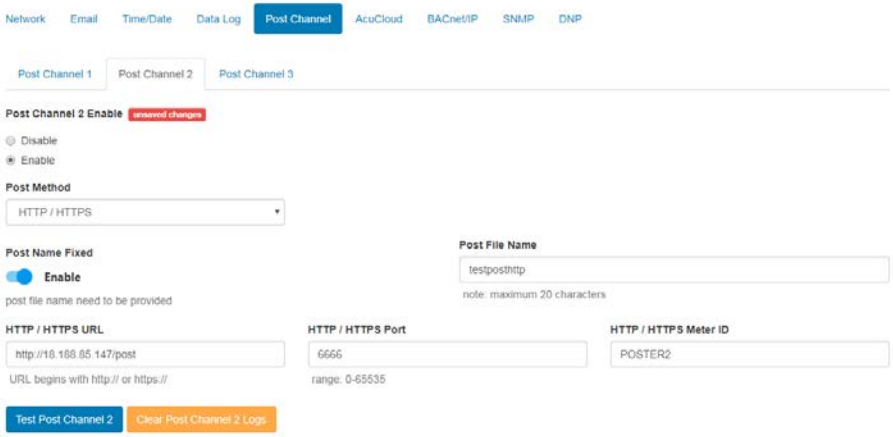
FTP Port: Enter the port number the server will be listening on

FTP Username: Enter the username required to log into the FTP server

FTP Password: Enter the password required to log into the FTP server

Note: The "TEST Post Channel 2" button should only be utilized after clicking the 'Save' button otherwise a fail response will be observed. If a fail response occurs after clicking 'Save' confirm the network settings or credentials for the server.

Click 'Save' after changing any settings. Users will be prompted to reboot the AXM-WEB2 immediately or later. If later is chosen the AXM-WEB2 will need to be rebooted from the 'Management' page.Select the Post Channel 3 tab to configure the settings for post to a second server.



Select the Post Channel 3 tab to configure the settings for post to a second server.

Post Channel 3 Enable: Enable the Post Channel 3 in order to configure the settings needed to post data via the HTTP(S)/FTP post functions

Post Method: Select the method for posting the files, the user can choose HTTP/HTTPS or FTP

Post Name Fixed: This configuration needs to be enabled in order for user to control the name of the file that will be posted. Otherwise file name will be based on the Log File Name Format configuration from the Data Log settings

Post File Name: User can enter a name for the file that will be posted as if Post Name Fixed is enabled

If the HTTP/HTTPs post method is selected:

HTTP/HTTPS URL: Enter the URL for the HTTP/HTTPS server. The URL needs to begin with the prefix http:// (https://)

HTTP/HTTPS Port: Enter the port number the server will be listening on

HTTP/HTTPS Meter ID: Enter a name or description for the meter to be identified on the server

If the FTP post method is selected:

FTP URL: Enter the URL for the FTP server. The URL needs to begin with the prefix ftp://

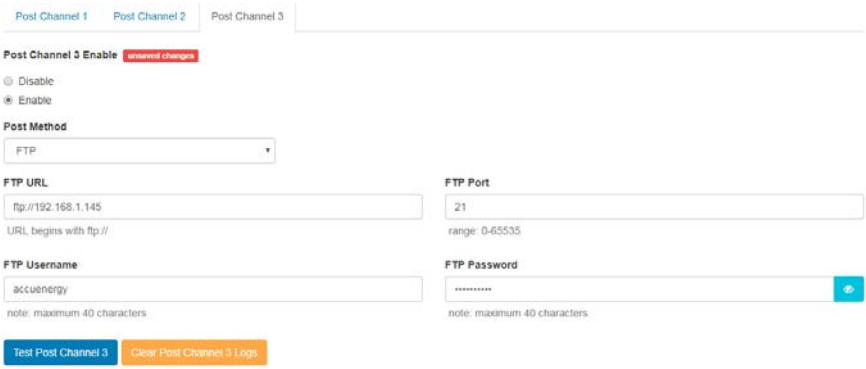
FTP Port: Enter the port number the server will be listening on

FTP Username: Enter the username required to log into the FTP server

FTP Password: Enter the password required to log into the FTP server

Note: The "TEST Post Channel 3" button should only be utilized after clicking the 'Save' button otherwise a fail response will be observed. If a fail response occurs after clicking 'Save' confirm the network settings or credentials for the server.

Click 'Save' after changing any settings. Users will be prompted to reboot the AXM-WEB2 immediately or later. If later is chosen the AXM-WEB2 will need to be rebooted from the 'Management' page.



AcuCloud

The AXM-WEB2 module can directly interface with the Accuenergy Cloud software AcuCloud. The AXM-WEB2 will post data to the cloud software every five minutes.

AcuCloud will require the serial number of the AXM-WEB2 module which will then provide a token that will be used to configure the AXM-WEB2 so it can send its data to AcuCloud.

The settings for the AcuCloud post function can be found by clicking on the 'Settings' tab and selecting 'Communications'. Select "AcuCloud" to access the settings to configure the AXM-WEB2 to send data to AcuCloud.

AcuCloud Enable: Select 'Enable' to enable the function and to further configure the settings related to AcuCloud.

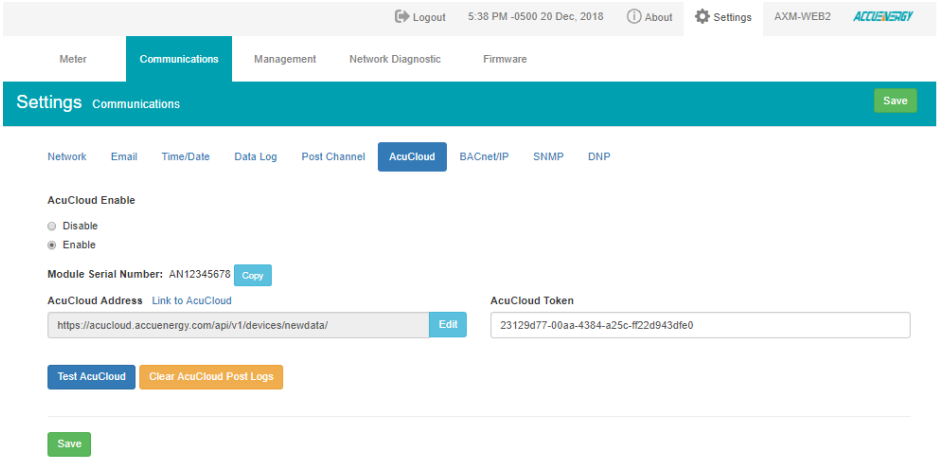
AcuClould Address: The following post URL will be configured by default so that the data can sent to the correct server: https://acucloud.accuenergy.com/api/v1/devices/newdata/

AcuCloud Token: Copy and paste the token provided by the AcuCloud software into this field.

Note: The "TEST AcuCloud" button should only be utilized after clicking the 'Save' button otherwise a fail response will be observed. If a fail response occurs after clicking 'Save' the serial number entered in AcuCloud should be double checked.

Click 'Save' after changing any settings. Users will be prompted to reboot the AXM-WEB2 immediately or later. If later is chosen the AXM-WEB2 will need to be rebooted from the 'Management' page.

The AXM-WEB2 will post the data continuously every 5 minutes after the reboot.



BACnet/IP

The AXM-WEB2 module supports the BACnet/IP protocol

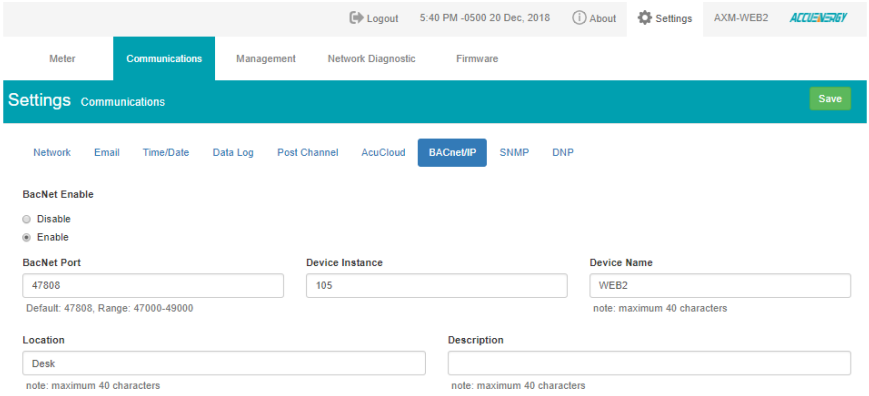
The settings for the BACnet/IP protocol can be found by clicking on the 'Settings' tab and selecting 'Communications'. Select "BACnet/IP" to access the settings to configure the AXM-WEB2 to communicate with a BACnet client.

BacNet Enabled: Select Enable to enable the BACnet protocol

BACnet Port: Enter the BACnet or UDP port number. Default port is 47808.

Device Instance: Enter the instance number for the device in the BACnet system. It must be unique within the system.

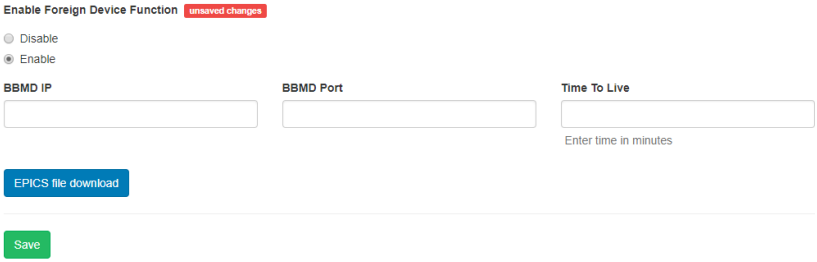
Device Name: Enter a name for the device to distinguish it from other devices within the network.



Under the "Enable Foreign Device Function", select 'Enable' to communicate with a BACnet device from another subnet.

- Enter the IP of the BACnet Broadcast Management Device(BBMD) under the 'BBMD IP' field for the device which will receive broadcast messages on one subnet and forward them to another subnet.
- Enter BACnet Port of the BBMD in *"BBMD Port"*
- Enter a value between 5-1440 min in the *"Time To Live"* for how often the foreign device will register in the BBMD's foreign device table.

Click 'Save' after changing any settings. Users will be prompted to reboot the AXM-WEB2 immediately or later. If later is chosen the AXM-WEB2 will need to be rebooted from the 'Management' page.



SNMP

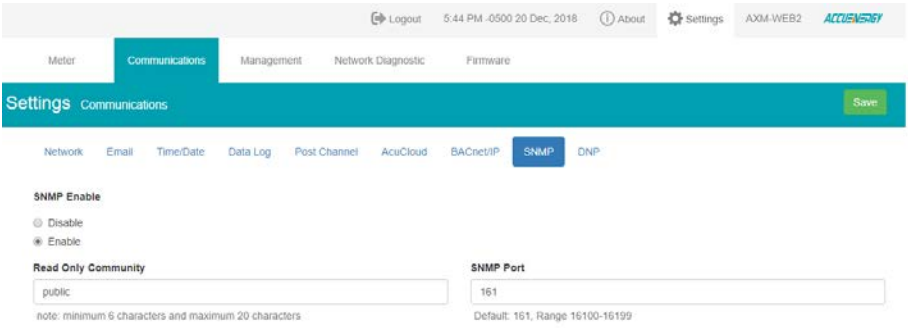
The AXM-WEB2 module supports the Simple Network Management Protocol(SNMP) protocol for reporting the metering data to the management station. The AXM-WEB2 uses a public community string for read-only access. By default the module will communicate using SNMP port 161. The AXM-WEB2 also supports traps to send unsolicited messages to up to four management stations.

The settings for the SNMP protocol can be found by clicking on the 'Settings' tab and selecting 'Communications'. Select "SNMP" to access the settings to configure the AXM-WEB2 to communicate with a SNMP management station.

SNMP Enable: Select 'Enable' to enable the function and to further configure the settings related to the SNMP protocol.

SNMP Port: By default the SNMP Port is configured to 161. The SNMP Port can be any value from 16100 to 16199.

Read Only Community: By default the community string is Public, this configuration is similar to a password which allows only authorized users to access the meters data.



Trap Enable: Select 'Enable' so that the meter will send a message to the management station when an event is triggered. The event could be a change in Digital Input Status. The notification can then be sent to upto 4 stations.

Trap Target 1: Enter the IP address and port number of station number 1 that should be notified when there is an event.

Trap Target 2: Enter the IP address and port number of station number 2 that should be notified when there is an event.

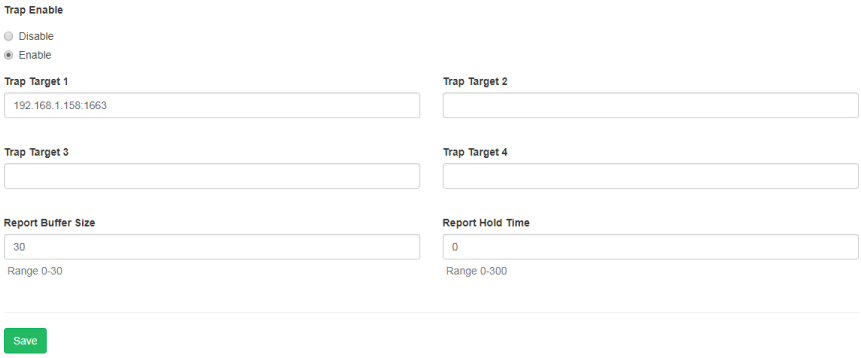
Trap Target 3: Enter the IP address and port number of station number 3 that should be notified when there is an event.

Trap Target 4: Enter the IP address and port number of station number 4 that should be notified when there is an event.

Report Buffer Size: Enter the size of the buffer for the amount of notifications will be stored before being sent to the management station. A maximum of 30 notifications can be stored.

Report Hold Time: Enter the time in seconds for how long the notification will be in queue before it gets sent to the management station. By default, this setting is configured to 0 so the notification will be sent immediately after an event occurs. This setting could be configured from 0-30 seconds.

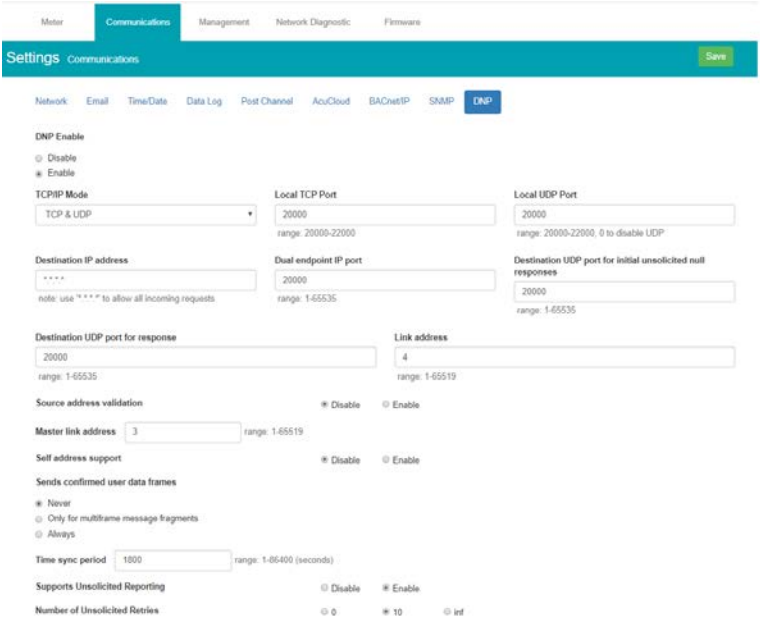
Click 'Save' after changing any settings. Users will be prompted to reboot the AXM-WEB2 immediately or later. If later is chosen the AXM-WEB2 will need to be rebooted from the 'Management' page.



DNP

TThe AXM-WEB2 supports the DNP communications protocol. The Distributed Network Protocol (DNP) is an open protocol used in the electric utility industry for communication and interoperability among substation computers, Remote Terminal Units(RTUs), Intelligent Electronic Devices(e.g. meters), and master stations.

The settings for the DNP protocol can be found by clicking on the 'Settings' tab and selecting 'Communications'. Select "DNP" to access the settings to configure the AXM-WEB2 to communicate with a DNP master.



DNP Enable: Select 'Enable' to enable the function and to further configure the settings related to the DNP function.

TCP/IP Mode: By default the TCP/IP is set as TCP&UDP, it can be changed to TCP dual endpoint mode or UDP only.

Local TCP Port: Enter the port number for the local TCP server.

Local UDP Port: Enter the port number for the local UDP server.

Destination IP address: The default IP address is set as *.*.*.* to allow all incoming requests.

Dual endpoint IP port: Enter the port number for the endpoint IP server.

Destination UDP port for initial unsolicited null responses: Enter the port number of the destination UDP server for the initial unsolicited null responses.

Destination UDP port for response: Enter the port number of the destination UDP server for response.

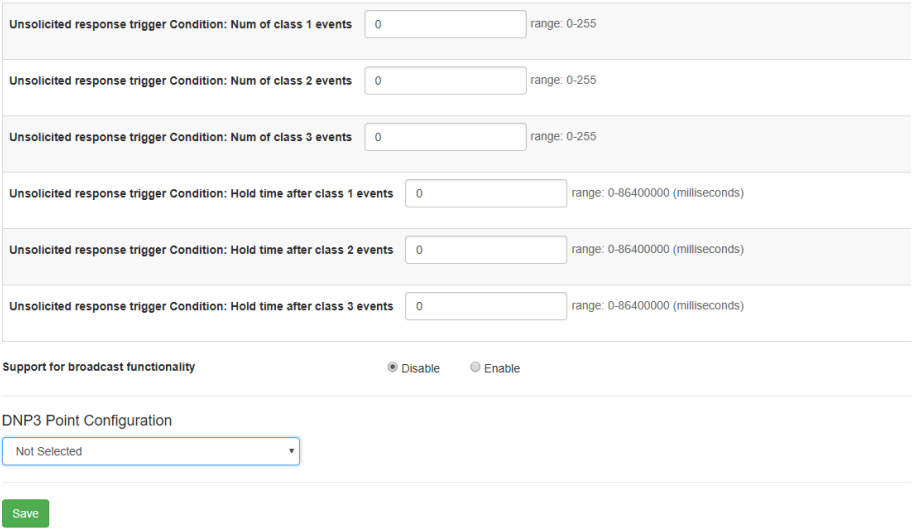
Link address: Enter the address number of the slave device.

Master link address: Enter the address number of the master device.

Source address validation: By default the validation is disabled, select 'Enable' to enable the destination address validation.

Supports Unsolicited Reporting: Select 'Enable' to enable the function and further configure the settings related to the unsolicited report.

Number of Unsolicited Retries: Number of retries can be selected as '0', '10' and 'infinite'.



Unsolicited response trigger Condition(Num of class # events): Enter the number of events for each class to setup the trigger point. The unsolicited response will be triggered once the number the class events reaches the configured triggering number.

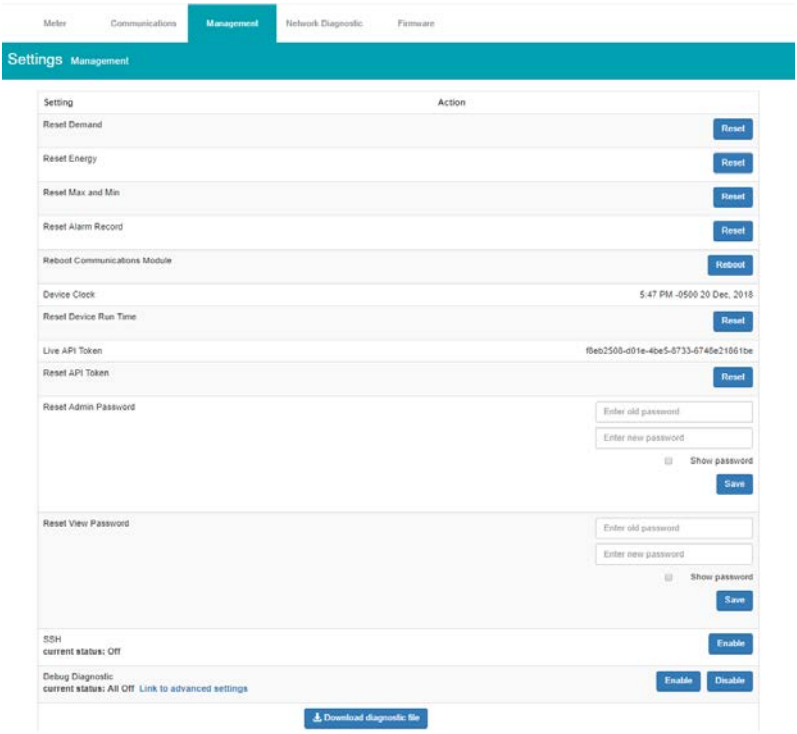
Unsolicited response trigger Condition(Hold time after class # events): Enter the threshold holding time for each class, the unsolicited response will be triggered once the event holding time is longer or equal to the threshold time.

Management

The Management webpage can be used to reset parameters such as the Demand, Energy, Max/Min and the Alarm records. Users can also reboot the web module as well as setting or changing the password for the access level. Users can enable the SSH to remotely log into the meter using the SSH protocol. There is also a network log file for the module that users can download which can be used to analyze the modules diagnostics.

Note: Please send the log file to Accuenergy's Technical Support(support@accuenergy.com) for analysis.

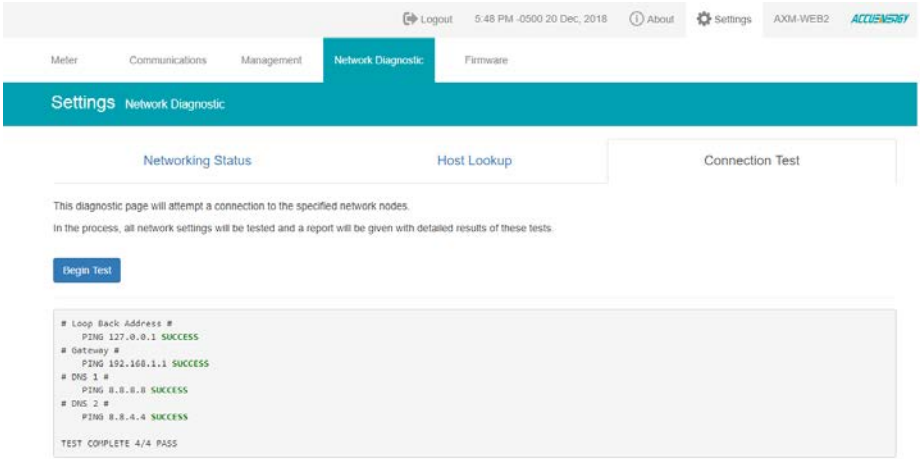
This page is where the AXM-WEB2 can be rebooted so that all changes and configurations can take effect. This can be done by clicking on ''Reboot Communication Module''.



Network Diagnostic

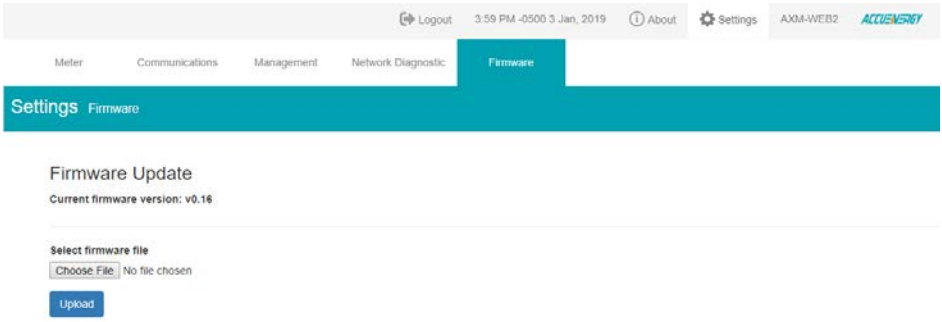
The Network Diagnostic page can be used to monitor the network status of the module.

User can also use the Connection Test function to test the local network that the module connected to. The test result will show SUCCESS and PASS if there is no issues found.

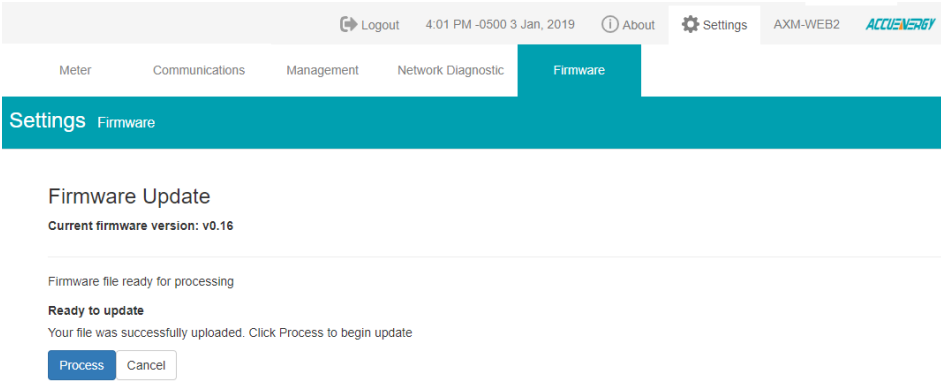


Module Firmware

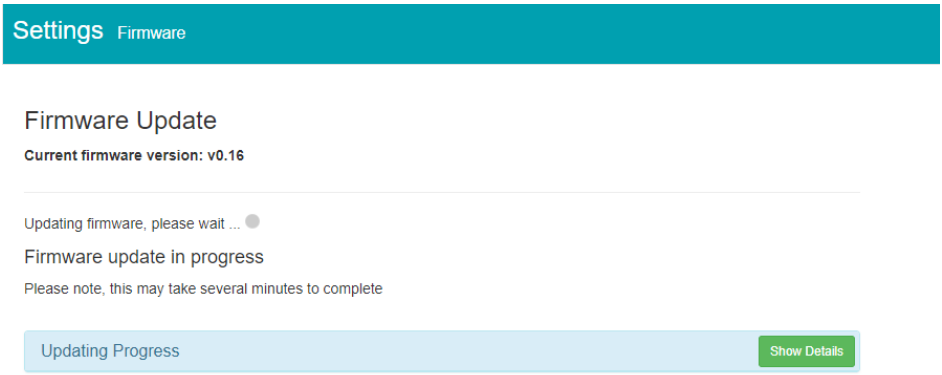
The Module Firmware webpage is used for updating the firmware version on the AXM-WEB2 module. The user can check if the module they are using is up to date and update the module if needed or they can contact Technical Support with the current firmware version of the AXM-WEB2 module which can be found from the Device Information page.



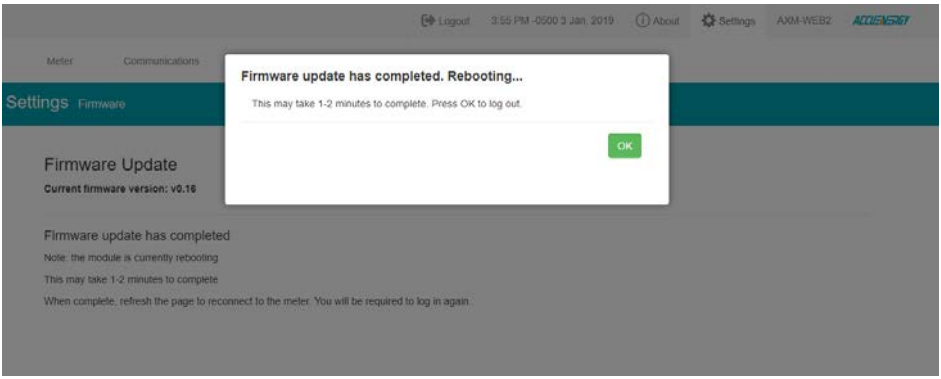
Once the upload was successfully uploaded you will see the following page confirming that the file was uploaded.



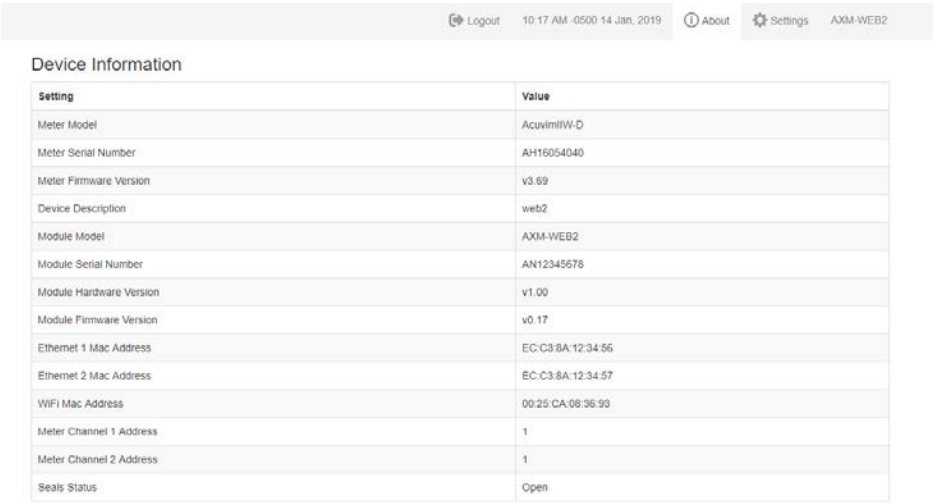
Click 'Process' to begin the update.



Click 'OK' to log out the web interface and wait for 1-2 minutes to complete the reboot.



Login to the web interface of AXM-WEB2 after the reboot is complete, and go to the 'About' page to check if the module firmware version is updated.



Setting	Value
Meter Model	AcuvimIIW-D
Meter Serial Number	AH16054040
Meter Firmware Version	v3.69
Device Description	web2
Module Model	AXM-WEB2
Module Serial Number	AN12345678
Module Hardware Version	v1.00
Module Firmware Version	v0.17
Ethernet 1 Mac Address	EC:C3:8A:12:34:56
Ethernet 2 Mac Address	EC:C3:8A:12:34:57
WIFI Mac Address	00:25:CA:08:36:93
Meter Channel 1 Address	1
Meter Channel 2 Address	1
Seals Status	Open

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Revision Date: December 2018