



Acuvim II Series Power Meter AXM-WEB-PUSH Users Manual



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(603) 746-5524
www.microdaq.com

ACCUEVERGY

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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 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

The AXM-WEB-PUSH 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.

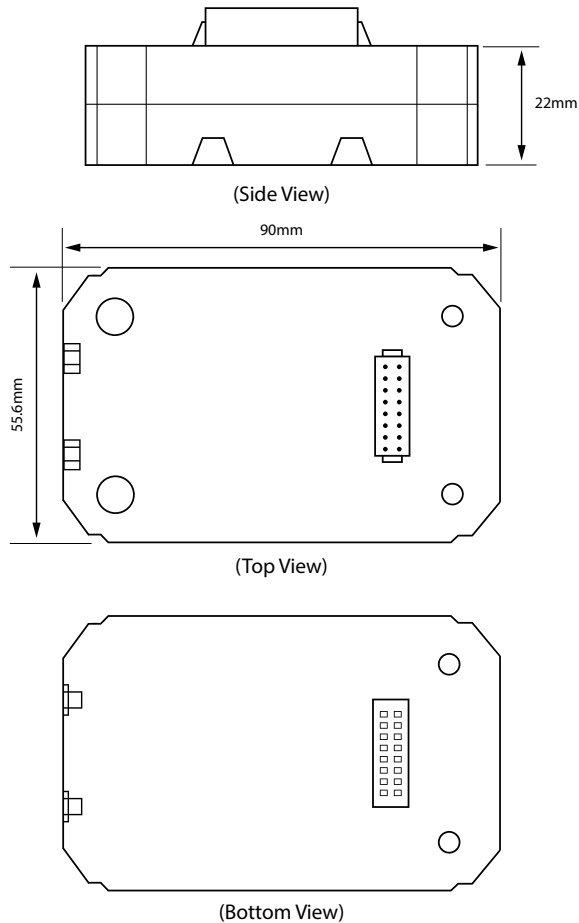
This module supports the SMTP protocol, which allows the user to send emails based on a specific time interval or when a triggered event occurs. It can send mail from encrypted servers and servers that use different SMTP ports.

The AXM-WEB-PUSH supports the HTTPS protocol, it is used as an HTTPS server where the default value of the protocol port is 443. Using the HTTPS protocol, the AXM-WEB-PUSH can send post requests to both HTTP and HTTPS servers.

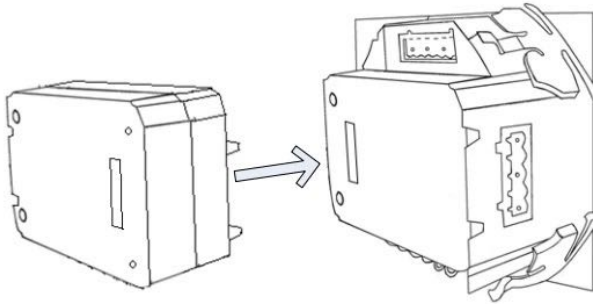
The following are all the protocols supported by the AXM-WEB-PUSH module:

- ***Modbus TCP***
- ***SNMP***
- ***DNP 3.0***
- ***SMTP***
- ***SNTP***
- ***HTTP/HTTPS***
- ***FTP***
- ***sFTP***

3. Appearance and Dimensions



4. Installation Method



The AXM-WEB-PUSH 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-WEB-PUSH.

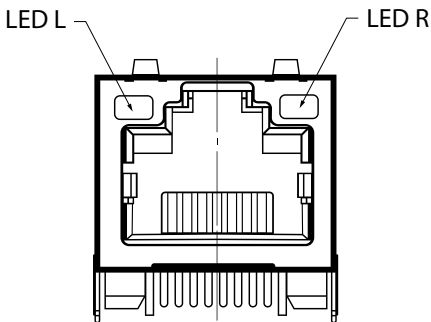
- 1) Remove cover from the back of the Acuvim II series meter which will expose the socket.
- 2) Insert the installation clips to the grooves in the Acuvim II series meter and then press the AXM-WEB-PUSH module lightly to establish a linking between meter and module.
- 3) Tighten the installation screws.

NOTE: Installation with power to the meter is forbidden.

NOTE: If using extended I/O modules with AXM-WEB-PUSH module, ensure that the WEB-PUSH module is attached to the meter first followed by the I/O modules. If the WEB-PUSH module is not connected first it will not be able to communicate with the Acuvim II meter.

5. Definition of RJ45

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



(Top View)

Script	ID	Content
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 100Mbps, while 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.

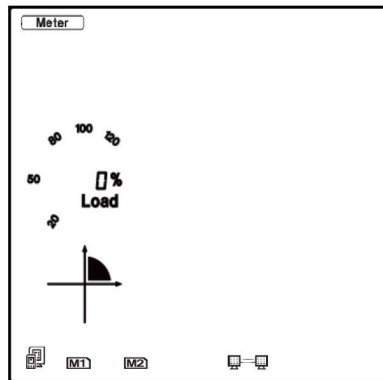
6. Initializing the Ethernet module

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

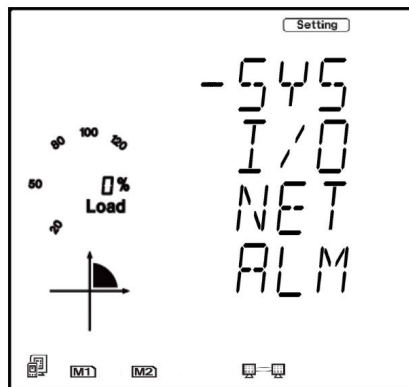
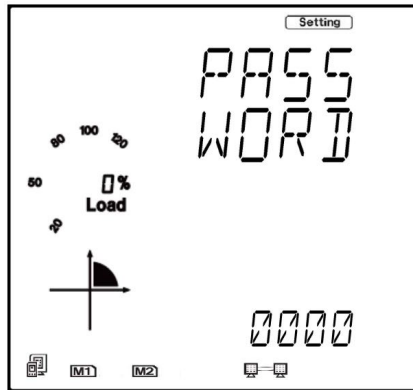
- **DHCP:** Manual
- **IP Address:** 192.168.1.254
- **Subnet Mask:** 255.255.255.0
- **Gateway:** 192.168.1.1
- **Primary DNS Server:** 8.8.8.8
- **Secondary DNS Server:** 8.8.4.4
- **Modbus Port:** 502
- **HTTP Port:** 80

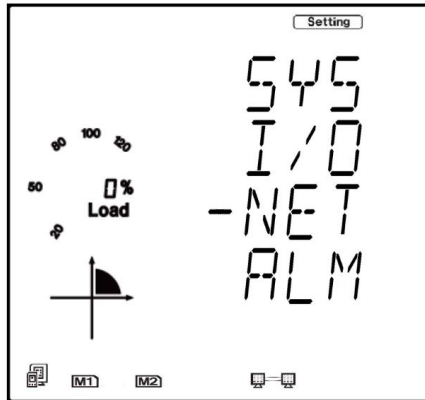
This information can be found by using the buttons from the meter display. The following is how to configure the Ethernet module settings from the display:

- Press the **H** and **V/A** buttons simultaneously on the Acuvim II series for about a second and release. The screen will go blank and **Meter** will be flashing.



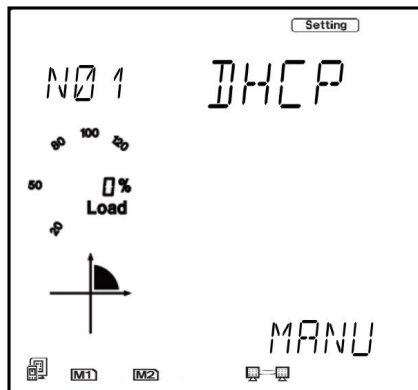
- Press the **P** or **E** button to move the cursor to **Setting** and then press **V/A** to enter the parameter setting mode. The device address page is the first page of the 'Setting' mode. It will show the Modbus address of the meter for a second before prompting for the password of the device.
-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



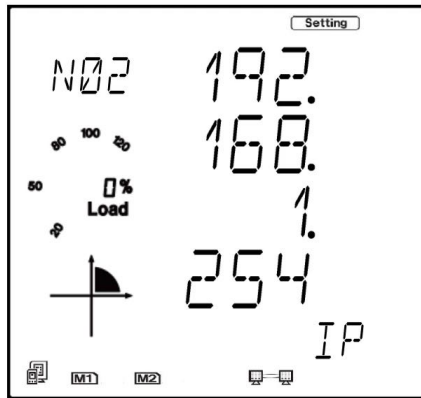


- The first page of the **NET Settings** will be the **N01 DHCP** page. By default this is configured to Manual. Configuring this setting to **Auto** will allow the network to assign the meter an IP address, while **Manual** will allow the user to configure the IP address.
- Press the **V/A** button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

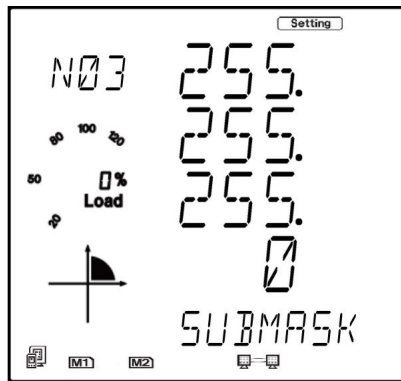
NOTE: If the DHCP is selected as Auto, the Ethernet module needs to be rebooted before it can be assigned with the new IP address.



- Press **P** to move to the next screen which is **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 configure 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. Once the IP is configured users can press **V/A** to confirm the setting.



- Press **P** to move to the **N03 Subnet Mask** page. This is the subnet mask setting of the meter. If the DHCP is set for Manual users must manually configure subnet mask.
- To configure the submask press **V/A** to enter edit mode, the cursor of the first digit will begin to flash.
- Press the **H** button to scroll to the next digit and press **P** or **E** to change the value of the digit. Once the sub mask has the correct address press **V/A** to confirm setting.

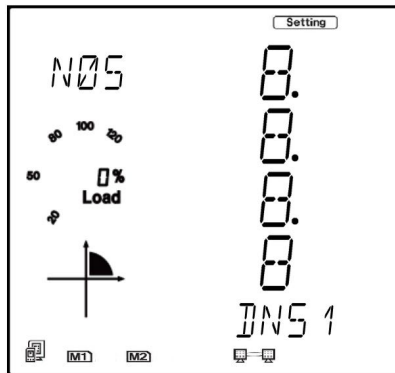


- Press **P** to move to the **N04 Gateway** page. This is the meters gateway setting, and will need to be configured if the DHCP is set to Manual.
- To configure the gateway press **V/A** to enter edit mode, the cursor will begin to flash on the first digit.
- Press the **H** button to scroll through the digits, and then press **P** or **E** to change the value of the digit. Once the gateway is configured press **V/A** to confirm the setting.

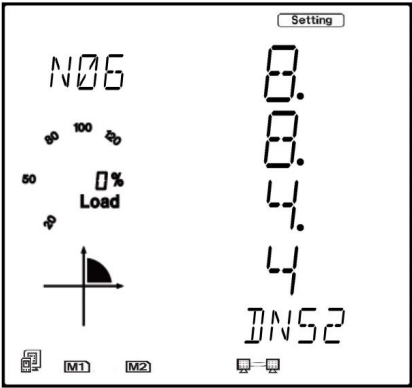


- Press **P** to move to the **N05 DNS Primary Server** page. This is the primary DNS setting of the meter.
- To configure the DNS press **V/A** to enter edit mode, the cursor of the first digit will begin to flash.
- Press the **H** button to scroll through the digits, and then press either **P** or **E** to change the value of the digit. Once the primary DNS server address is entered in press **V/A** to confirm the setting.

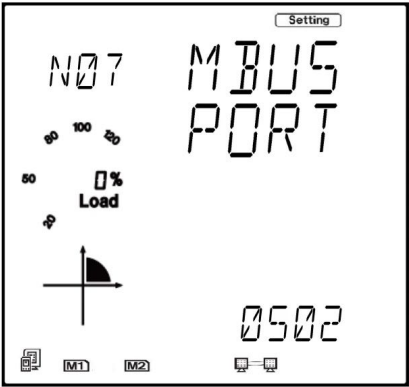
NOTE: The DNS parameters must be set correctly to use the SMTP, FTP/HTTP Post and Acu-Cloud functions.



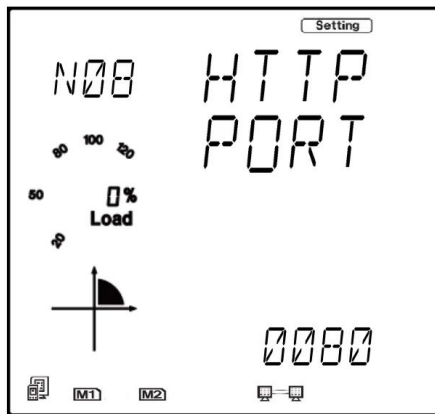
- Press **P** to move to the **N06 DNS Secondary Server** page. This is the secondary DNS server setting of the Acuvim II meter.
- Press **V/A** to enter edit mode, the cursor of the first digit will begin to flash.
- Press the **H** button to scroll through the digits, and press the **P** or **E** to change the value of the flashing cursor. Once the secondary DNS server address is entered press **V/A** to confirm the setting.



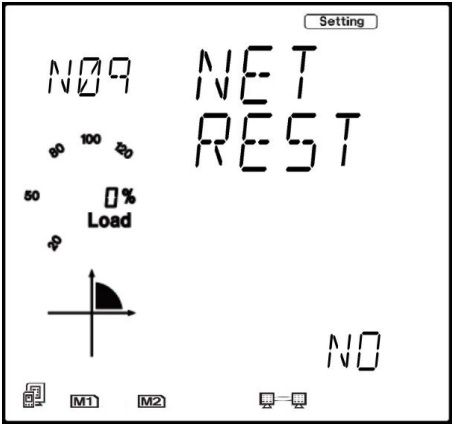
- Press **P** to move to **N07 Modbus Port** page. This is the Modbus port setting of the meter, the default is 502 and the range is from 2000-5999.
- To configure the Modbus port press **V/A** to enter edit mode, the cursor of the first digit will begin to flash.
- Press the **H** button to scroll through the digits, and then press the **P** or **E** button to change the value of the digit. Once the Modbus port is configured press **V/A** to confirm the setting.



- Press **P** to move to the **N08 HTTP Port** page. This is the meters HTTP port setting screen, the default is 80 and the range is from 6000-9999.
- To configure the HTTP port press **V/A** to enter edit mode, the cursor of the first digit will begin to flash.
- Press the **H** button to scroll through the digits, and then press the **P** or **E** button to change the value of the digit. Once the HTTP port is configured press **V/A** to confirm the setting.



- Press **P** to move to the **N09 NET REST** page. After making any changes to the NET settings (pages N01-N08), users must reboot the Ethernet module from this page in order for the settings to take effect.
- To perform the reboot press **V/A** to enter edit mode, the cursor will begin to flash. Press the **P** or **E** button to change the setting to **RESET** and press **V/A** to confirm to reset. The cursor will return to **NO** once successful.



After configuring the AXM-WEB-PUSH module, press the **H** and **V/A** buttons simultaneously, the screen will go blank and **Setting** will be flashing. From here users can press either the **P** or **E** buttons to navigate to **Meter** and then press **V/A** to navigate back to the main metering page.

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

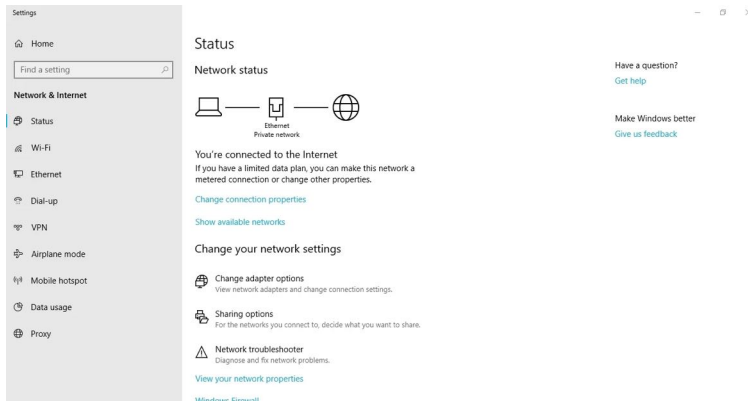
There are two ways that users can access the meters web interface, either using a direct Ethernet connection or by connecting to a router/switch.

8.1 Direct Ethernet Connection to Computer

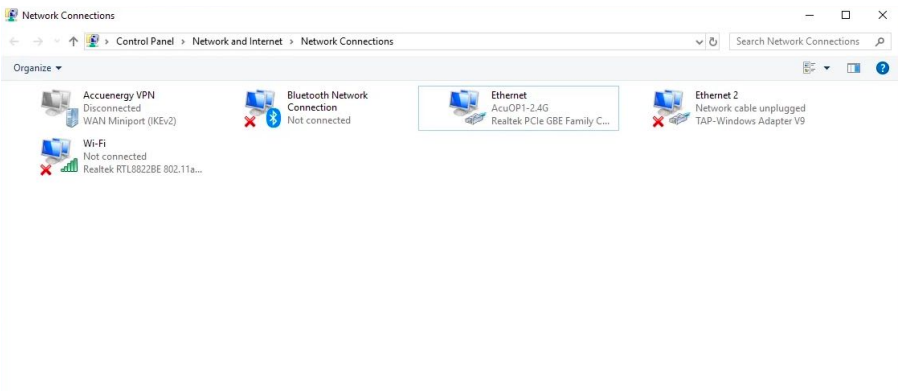
The AXM-WEB-PUSH can be connected to a computer using a crossover cable(standard 568A). The AXM-WEB-PUSH module supports Modbus-TCP and HTTPS Functions for this method of connection.

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

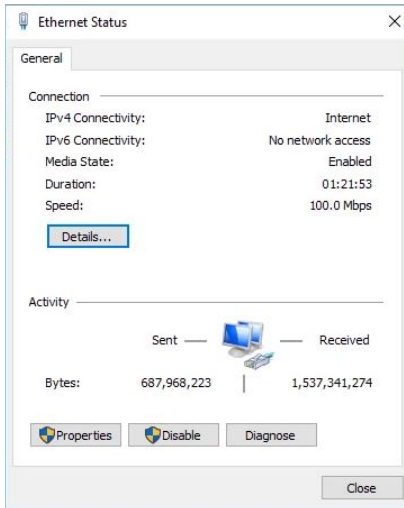
- Manually connect the meter via Ethernet cable to the computer
- Right click on the connection icon
- Select **Open Network and Internet Settings**



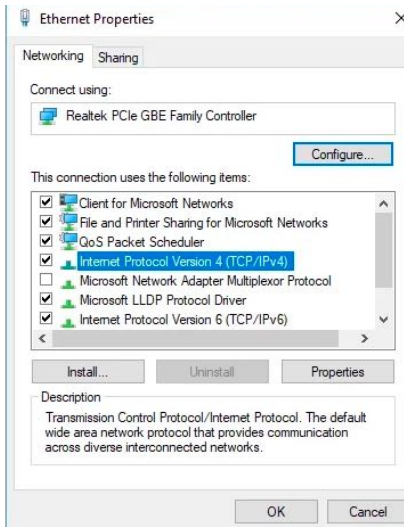
- Once there click on **Change adapter options**.



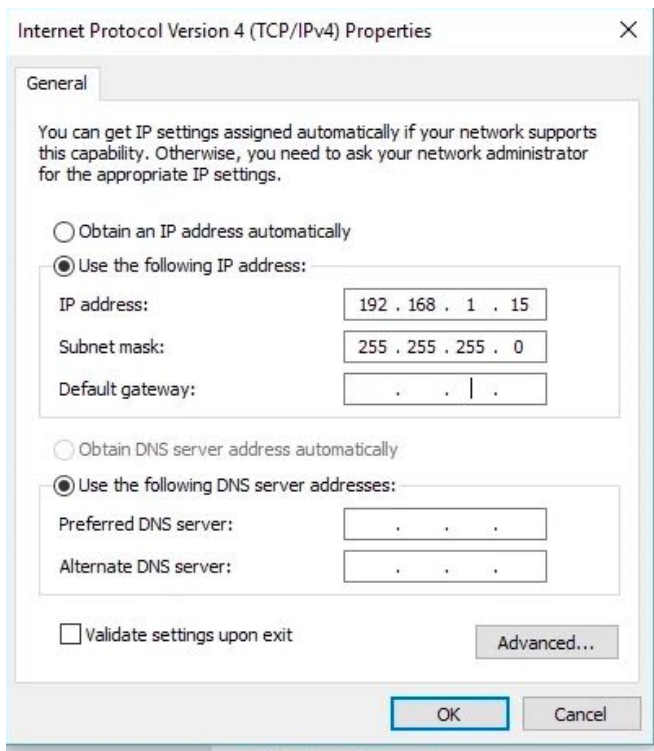
- Once there, right click on the Ethernet icon and select **Properties**.




- Select the icon **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 a 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 to automatically populate the sub mask setting for the computer.
- Before selecting the OK button make note of the IP address you have assigned to the meter and then press **OK**.
- From here users can enter in the IP address of the Meter into an internet browser to access the web interface, the following login page will be displayed.



Sign in to continue

Access Level

☒ **User** View reports and settings

☐ **Admin** Edit settings, control meter


Password

Sign in

8.2 Connection to Router/Switch

The AXM-WEB-PUSH can be connected to a router or switch using a patch cable. If users have the DHCP set for AUTO, once connected to a router/switch the IP address will automatically be assigned to the meter by the network. If the DHCP is configured to Manual users must configure an IP address, submask and gateway that are required for the network they are connecting to. For more information on configuring the IP address of the meter refer to Chapter 5.

Once users have the IP address assigned from the network or have the IP that was manually configured, enter in the IP into an internet browser. The following login page to the web interface will be seen.



Sign in to continue

Access Level

☒ User View reports and settings

☐ Admin Edit settings, control meter

Password

Sign in

9. Description of Modbus-TCP Protocol

The Modbus-TCP protocol is used as one of the communication protocols in the AXM-WEB-PUSH. 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

a. Data Frame Format

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

9.1.1 Modbus Application Header (MBA Header) Field

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

Field	Length	Description
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

9.1.2 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	Action
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

9.1.3 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

Function Code	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	1	1	1	1

MSB

LSB

(Relay 1 = OFF, Relay 2 = ON)

9.2.3 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 reg hi	Data start reg lo	Data #of regs hi	Data #of regs 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	Data start reg hi	Data start reg lo
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

9.2.4 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 regs hi	Data #of regs 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	04H	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
003h	0CH	07H	D6H	00H	0CH	00H	12H	00H	0EH	00H	0FH	00H	14H

9.2.5 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	Value hi	Value 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 regs hi	Data #of regs lo
05H	00H	00H	FFH	00H

9.2.6 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	0BvH	01H

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

10. Web Interface Readings and Parameter Settings

The AXM-WEB-PUSH module supports the HTTPS protocol to allow for the use of a web interface. The user will need to access the AXM-WEB-PUSH web interface to configure the module and to further use its functions.

The web interface allows for remote initial setup of the Acuvim II meter. The AXM-WEB-PUSH web interface allows for different user access levels.

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-WEB-PUSH.

NOTE: The recommend internet browser for the AXM-WEB-PUSH is either Google Chrome or Firefox.

The user will be redirected to a login web page where users will have to enter in the Access Level and enter appropriate password for that level.

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

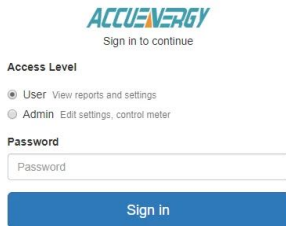
The default password for the User level is **view**.

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** access level is ideal for users who need access to configurations on the meter, the web interface and to view readings.

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

The AXM-WEB-PUSH web interface will only allow one admin to be logged in at a time. If another user logs in at this access level, the previous user will be logged out.



SSL Certificate 

The two different access levels are summarised 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 menu tabs to access different pages in the web interface such as **Metering**, **Status**, 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-WEB-PUSH module has been connected to the network since the last reboot of the module in the bottom left corner of the page.

The parameters on this page are updated every 5 sec.



Dashboard
10:45 AM -0400 05 Jun, 2020
Metering
Status
Settings
Logout

Dashboard

AXM-WEB-PUSH

Basic Metering

Average Voltage	0.000 V
Average Line Voltage	0.000 V
Average Current	0.000 A
Frequency	0.000 Hz
Full Report	

THD

THD Voltage Average	0.000 %
THD Current Average	0.000 %
Full Report	

Power & Energy

Total Power Factor	1.000 PF
Total Apparent Power	0.000 kVA
Total Active Power	0.000 kW
Import Active Energy	0.0 kWh
Full Report	

Max Demand

Maximum Apparent Power Demand	0.000 kVA
Maximum Active Power Demand	0.000 kW
Full Report	

Module up since Fri Jun 05 2020 10:44:02 GMT-0400 (Eastern Daylight Time)

NOTE: If user is logged in with User access, clicking on Settings will automatically log the user out from the web interface.

Settings screens are only available when logged in as Admin.
Please login as Admin to continue.

Please try again!

Cancel

10.3 Metering web page

Click on the **Metering** menu tab to visit the metering data web pages. There are 9 kinds of metering parameter web pages, they are **Trendlog**, **Basic Metering**, **Power & Energy**, **Min/Max**, **THD**, **Harmonics**, **Phase Angles**, **Sequence**, and **Data Log**.

Each web page shows data from the Acuvim II series meter.

ACCUENERGY

Dashboard4:03 PM -0500 17 Jan, 2019MeteringStatusSettingsLogout

Dashboard

Basic Metering

Average Voltage	118.045	V
Average Line Voltage	0.000	V
Average Current	12.393	A
Frequency	59.970	Hz
Full Report		

THD

THD Voltage Average	2.510	%
THD Current Average	118.430	%
Full Report		

Power & Energy

Total Power Factor		
Total Apparent Power		
Total Active Power		
Import Active Energy		
Full Report		

Max Demand

Maximum Apparent Power Demand	4.700	kVA
Maximum Active Power Demand	0.900	kW
Full Report		

TrendLog

Basic Metering

Power & Energy

Min/Max

THD

Harmonics

Phase Angles

Sequence

Datalog



Acuvim II


THD	0.201	PF
Harmonics	4.394	kVA
Sequence	0.884	kW
Datalog	13,713.3	kWh

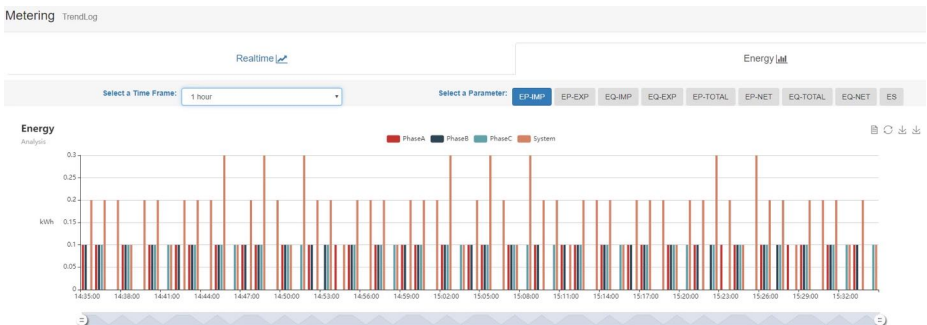
Module up since Wed Jan 16 2019 12:10:17 GMT-0500 (Eastern Standard Time)

10.3.1 Trend Log

The Trend Log web page includes the real-time and energy trend diagram. The real-time trend log 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 real-time parameters can be trended at 15 minute or 1 hour intervals. The energy trend log can show the imported and exported active energy, reactive energy, total energy, net energy and apparent energy. The energy parameters can be trended at 1 hour, 1 day, 1 month, and 1 year time intervals.

The data of the trend log can be previewed and downloaded as a csv file by clicking the **Data Preview**  and **Data**  icons on the right top side of the diagram.

The trend log diagram can also be saved as an image by clicking the **Image**  icon.




10.3.2 Basic Metering

The Basic Metering web page 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 5 seconds.

The values displayed in this web page will depend on the wiring configuration mode of the meter. For example, if the meter is configured as '3LL' then the metering web page will display '0.00' for the Phase Voltages/Powers.



[Dashboard](#)
[12:28 PM -0500 24 Jan, 2019](#)
[Metering ▾](#)
[Status ▾](#)
[Settings ▾](#)
[Logout](#)

Metering Basic Metering

Parameter	Phase A	Phase B	Phase C	Average	Total
Line-to-Neutral Voltage V	117.654	117.421	117.547	117.541	-
Line-to-Line Voltage V	0.000	0.000	0.000	0.000	-
Current A	123.513	123.667	123.927	123.702	-
Neutral Current A	-	-	-	-	0.000
Active Power kW	-8.833	8.813	8.822	-	8.802
Reactive Power kvar	2.988	-2.973	-2.985	-	-2.970
Apparent Power kVA	14.779	14.743	14.762	-	44.283
Power Factor	-0.598	0.598	0.598	-	0.199
Frequency Hz	59.990				
Load Type	C				

10.3.3 Power & Energy

The Power & Energy web page 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.

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

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

ACCUENERGY

Dashboard

12:29 PM -0500 24 Jan, 2019

Metering

Status

Settings

Logout

Metering

Power & Energy

Energy by Consumption/Generation

Parameter	Import	Export	Total	Net
Active Energy kWh	6,881,300	0.000		6,881,300
Reactive Energy kvarh	0.000	2,412,100		-2,412,100
Apparent Energy kVAh	-	-		35,530,898

Energy by Phase

Parameter	Phase A	Phase B	Phase C
Import Active Energy	0.0	6,889.7	6,897.5
Export Active Energy kWh	6,905.8	0.0	0.0
Import Reactive Energy kvarh	2,429.8	0.0	0.0
Export Reactive Energy kvarh	0.0	2,418.5	2,423.2
Apparent Energy kVAh	11,857.6	11,826.9	11,844.8


Demand

Parameter	Phase A	Phase B	Phase C	Total
Active Power Demand kW	-	-	-	6.793
Reactive Power Demand kvar	-	-	-	-2.938
Apparent Power Demand kVA	-	-	-	43.650
Current Demand A	123.938	123.853	123.917	-

10.3.4 Min/Max

The Min/Max page shows the maximum and minimum statistics that the meter has records since the lifetime 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 seconds.



[Dashboard](#)
[12:36 PM - 05/01/24 Jan, 2019](#)
[Metering +](#)
[Status +](#)
[Settings +](#)
[Logout](#)

Metering


MinMax

Parameter	Min	Min Timestamp	Max	Max Timestamp
Phase A Voltage V	0.000	2018-08-20 12:31:45	126.200	2018-10-16 14:27:29
Phase B Voltage V	0.000	2018-08-20 12:31:45	126.000	2018-10-16 14:27:29
Phase C Voltage V	0.000	2018-08-20 12:31:45	126.100	2018-10-16 14:27:29
Line Voltage AB V	0.000	2018-08-20 12:31:45	0.000	2018-08-20 12:31:45
Line Voltage BC V	0.000	2018-08-20 12:31:45	0.000	2018-08-20 12:31:45
Line Voltage CA V	0.000	2018-08-20 12:31:45	0.000	2018-08-20 12:31:45
Phase A Current A	0.000	2018-08-20 12:31:45	201.000	2018-11-27 15:30:25
Phase B Current A	0.000	2018-08-20 12:31:45	201.000	2018-11-27 15:30:25
Phase C Current A	0.000	2018-08-20 12:31:45	201.000	2018-11-27 15:30:25
Active Power kW	-3.000	2018-11-22 15:59:34	10.000	2018-11-27 05:49:06
Reactive Power kVar	-6.000	2018-10-26 00:59:18	3.000	2018-10-29 17:24:42
Apparent Power kVA	0.000	2018-08-20 12:31:45	73.000	2018-11-26 12:04:58
Power Factor	-1.000	2018-10-26 00:54:41	1.000	2018-08-29 11:26:41
Frequency Hz	0.000	2018-08-20 12:31:45	61.120	2018-09-09 08:02:05
Active Power Demand kW	0.000	2018-08-20 12:31:45	10.000	2018-11-27 15:14:55
Reactive Power Demand kVar	-3.000	2018-08-20 12:50:47	0.000	2018-08-20 12:31:45
Apparent Power Demand kVA	0.000	2018-08-20 12:31:45	49.000	2018-11-27 05:53:48
Voltage Unbalance %	0.000	2018-08-20 12:31:45	11.100	2018-08-27 20:15:32
Current Unbalance %	0.000	2018-08-20 12:31:45	100.000	2018-08-20 13:33:59
Phase A Voltage THD %	0.000	2018-08-20 12:31:45	10.790	2018-11-23 11:35:23
Phase B Voltage THD %	0.000	2018-08-20 12:31:45	10.880	2018-11-23 11:35:23
Phase C Voltage THD %	0.000	2018-08-20 12:31:45	10.740	2018-11-23 11:35:23
Phase A Current THD %	0.000	2018-08-20 12:31:45	272.190	2018-11-13 12:50:40
Phase B Current THD %	0.000	2018-08-20 12:31:45	282.750	2018-11-13 12:50:40
Phase C Current THD %	0.000	2018-08-20 12:31:45	281.580	2018-11-13 12:50:40

10.3.5 THD

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

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


Dashboard 12:32 PM -0500 24 Jan, 2019 Metering ▾ Status ▾ Settings ▾ Logout

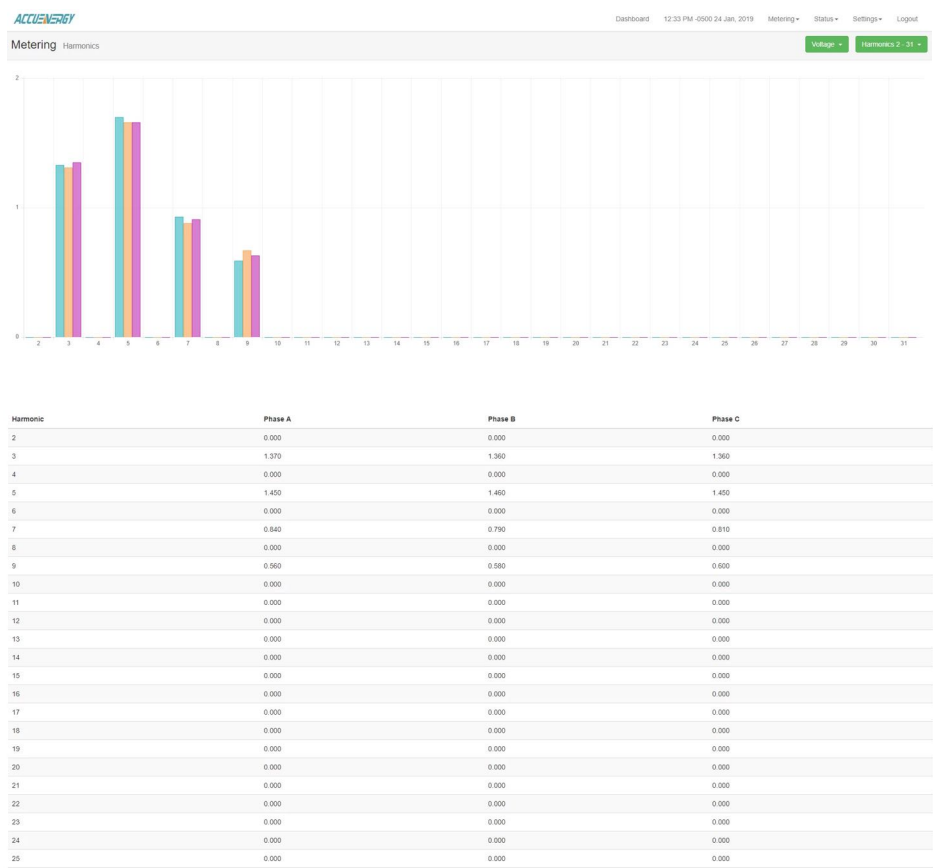
Metering THD

Parameter	Phase A	Phase B	Phase C
THD Voltage %	2.360	2.360	2.300
THD Current %	115.110	117.410	115.140
THD Odd Line Voltage %	2.330	2.310	2.300
THD Even Line Voltage %	0.400	0.500	0.000
Crest Factor Line Voltage	1.474	1.473	1.474
THFF Line Voltage %	0.700	0.740	0.560
THD Odd Current %	114.900	117.370	115.130
THD Even Current %	7.110	3.380	1.690
K Factor Current	47.800	49.000	44.000

10.3.6 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 a graphical and tabular format. Select between voltage and current to view their respective harmonics as well as between the 2nd-31st harmonics or 32nd-63rd from the drop down list.

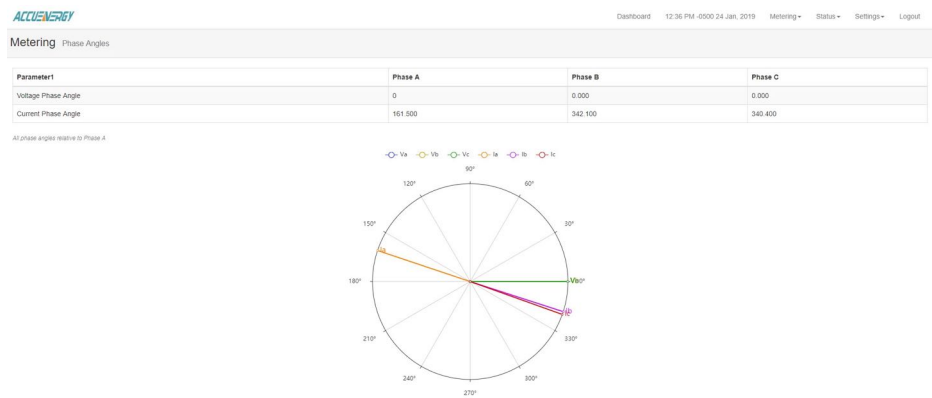
The parameters in this web page are updated every 15 seconds.



10.3.7 Phase Angle

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 provide a visual diagram of the phase angles with respect to the voltage connected to the Phase A voltage input.

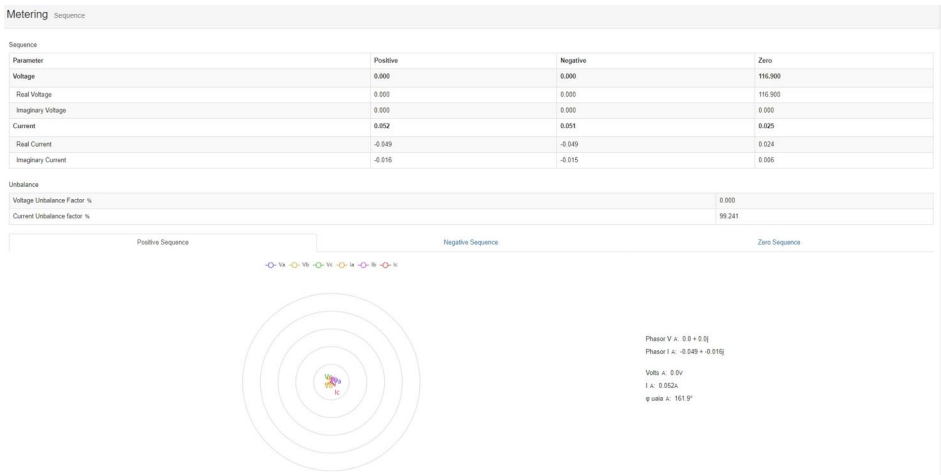
The parameters in this web page are updated every 5 seconds.



10.3.8 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 15 seconds.



10.3.9 Data log

The data log web page includes all the data files from the meter. The log file for the meter can be downloaded by clicking on the file name where the file is downloaded as a csv file.

To delete the data log, select the log files first and then click on **Delete Selected** button. The data log page shows the time and date the log file was updated at as well as the size of the file. The data logs can be configured in the Communication settings which will be discussed later on in the User Manual.

Datalog download			
Select All	Files	Updated at	Size
<input type="checkbox"/>	logger1-2019-07-04T10:45:00-1day.csv	2019-07-04 11:35:06	1 KB
<input type="checkbox"/>	logger1-2019-07-03T10:45:00-1day.csv	2019-07-04 10:40:05	1 KB
<input type="checkbox"/>	logger1-2019-07-02T10:45:00-1day.csv	2019-07-03 10:40:06	10 KB
<input type="checkbox"/>	logger1-2019-07-01T10:45:00-1day.csv	2019-07-02 10:40:05	11 KB
<input type="checkbox"/>	logger1-2019-06-30T10:45:00-1day.csv	2019-07-01 10:40:04	11 KB
<input type="checkbox"/>	logger1-2019-06-29T10:45:00-1day.csv	2019-06-30 10:40:05	11 KB
<input type="checkbox"/>	logger1-2019-06-28T10:45:00-1day.csv	2019-06-29 10:40:04	11 KB
<input type="checkbox"/>	logger1-2019-06-27T10:45:00-1day.csv	2019-06-28 10:40:05	11 KB
<input type="checkbox"/>	logger1-2019-06-26T10:45:00-1day.csv	2019-06-27 10:40:06	11 KB
<input type="checkbox"/>	logger1-2019-06-25T10:45:00-1day.csv	2019-06-26 10:40:05	11 KB
Delete Selected			
<div> <div>1</div> <div>2</div> </div>			

10.4 Status Menu

Click on the **Status** menu tab to visit the status parameter web pages. There are four kinds of status web pages, **Device Information**, **Alarm Status**, **I/O** and **SOE statuses**.

Each web page shows different status or information about the Acuvim II series meter.

ACCUENERGY

Dashboard12:43 PM -0500 24 Jan, 2019MeteringStatusSettingsLogout

Dashboard

Basic Metering

Average Voltage117.726 V

Average Line Voltage0.000 V

Average Current124.258 A

Frequency60.010 Hz

Full Report

THD

THD Voltage Average2.410 %

THD Current Average116.600 %

Full Report

Power & Energy

Total Power Factor0.201 PF

Total Apparent Power43.747 kVA

Total Active Power8.793 kW

Import Active Energy6,683.3 kWh

Full Report

Max Demand

Maximum Apparent Power Demand49,000 kVA

Maximum Active Power Demand10,000 kW

Full Report

Module up since Tue Jan 22 2019 13:29:52 GMT-0800 (Eastern Standard Time)

10.4.1 Device Information

The Device Information web page shows information about the Acuvim II series meter and AXM-WEB-PUSH module. It will contain the model of the Acuvim II series meter serial number, firmware version and meter addresses. It also contains the serial number, hardware and firmware version as well as the MAC address of the AXM-WEB-PUSH module.

ACCUENERGY

Dashboard11:31 AM -0400 05 Jun, 2020MeteringStatusSettingsLogout

StatusDevice Information

Setting	Value
Meter Model	AcuvimIIW-D-RCT
Meter Serial Number	AH19052502
Meter Firmware Version	v4.05
Device Description	AXM-IWEB-PUSH
Module Model	AXM-IWEB-PUSH
Module Serial Number	AM20200525
Module Hardware Version	v1.00
Module Firmware Version	v1.36
Module BSP Version	v1.08
Mac Address	EC:C3:8A:20:20:05
Meter Channel 1 Address	1
Meter Channel 2 Address (Modbus TCP)	1
Seals Status	Open

10.4.2 Alarm Status

The alarm status 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 this web page are updated every 10 seconds.

ACCUENERGY					
Dashboard 9:14 AM - 04/02/08 Jun, 2020 Metering Status Settings Logout					
Status Alarm Status					
	Alarm ID	Status	Parameter	Value	Timestamp
Alarm 1	1	Alarm	Frequency	0.000Hz	2020-06-05 09:39:36.267
Alarm 2	1	Alarm	Frequency	0.000Hz	2020-06-05 09:40:37.073
Alarm 3	1	Alarm	Frequency	0.000Hz	2020-06-05 10:16:42.073
Alarm 4	1	Alarm	Frequency	0.000Hz	2020-06-05 10:16:30.073
Alarm 5	1	Alarm	Frequency	0.000Hz	2020-06-05 10:37:57.073
Alarm 6	1	Alarm	Frequency	0.000Hz	2020-06-05 11:33:16.553
Alarm 7	1	Alarm	Frequency	0.000Hz	2020-06-05 11:33:34.688
Alarm 8	1	Alarm	Frequency	0.000Hz	2020-06-05 14:39:20.075
Alarm 9	1	Alarm	Frequency	0.000Hz	2020-06-03 11:24:21.303
Alarm 10	1	Alarm	Frequency	0.000Hz	2020-06-03 11:25:37.553
Alarm 11	1	Alarm	Frequency	0.000Hz	2020-06-03 16:55:01.147
Alarm 12	1	Alarm	Frequency	0.000Hz	2020-06-04 09:40:27.319
Alarm 13	1	Alarm	Frequency	0.000Hz	2020-06-04 13:54:29.073
Alarm 14	1	Alarm	Frequency	0.000Hz	2020-06-04 13:57:46.073
Alarm 15	1	Alarm	Frequency	0.000Hz	2020-06-04 14:00:16.073
Alarm 16	1	Alarm	Frequency	0.000Hz	2020-06-04 15:01:45.553

10.4.3 I/O

The I/O web page will display 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 parameters in this web page are updated every 5 seconds.

ACCUENERGY					
Dashboard 11:38 AM - 04/02/05 Jun, 2020 Metering Status Settings Logout					
Status I/O					
<div> <div> AXM-IO11 Module <div>Online</div> </div> <div> Relay Output <div> <div>RO1</div> <div>RO2</div> </div> </div> <div> Digital Input <div> <div>D1 Counter</div> <div>D3 Counter</div> <div>D5 Counter</div> </div> <div> <div>0</div> <div>0</div> <div>0</div> </div> <div> <div>D2 Counter</div> <div>D4 Counter</div> <div>D6 Counter</div> </div> <div> <div>0</div> <div>0</div> <div>0</div> </div> </div> </div>					
<div> <div> AXM-IO12 Module <div>Online</div> </div> <div> Analog Output <div> <div>AO1</div> <div>AO2</div> </div> </div> <div> Digital Input <div> <div>D1 Counter</div> <div>D3 Counter</div> </div> <div> <div>63</div> <div>15</div> </div> <div> <div>D2 Counter</div> <div>D4 Counter</div> </div> <div> <div>9</div> <div>1</div> </div> </div> </div>					
<div> <div> AXM-IO21 Module <div>Online</div> </div> <div> Analog Output <div> <div>AO1</div> <div>AO2</div> </div> </div> <div> Digital Input <div> <div>D1 Counter</div> <div>D3 Counter</div> </div> <div> <div>63</div> <div>15</div> </div> <div> <div>D2 Counter</div> <div>D4 Counter</div> </div> <div> <div>9</div> <div>1</div> </div> </div> </div>					
<div> <div> AXM-IO22 Module <div>Online</div> </div> <div> Analog Output <div> <div>AO1</div> <div>AO2</div> </div> </div> <div> Digital Input <div> <div>D1 Counter</div> <div>D3 Counter</div> </div> <div> <div>63</div> <div>15</div> </div> <div> <div>D2 Counter</div> <div>D4 Counter</div> </div> <div> <div>9</div> <div>1</div> </div> </div> </div>					

10.4.4 SOE

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 seconds.

ACCUENERGY

Dashboard9:16 AM - 04/01/20, 2020MeteringStatusSettingsLogout

StatusSOE

Group	D1 Status	D2 Status	D3 Status	D4 Status	D5 Status	D6 Status	Timestamp
Group 1	OK	OK	OK	OK	OK	OK	2020-05-22 15:59:20.959
Group 2	OK	OK	OK	OK	OK	OK	2020-05-22 16:01:53.779
Group 3	OK	OK	OK	OK	OK	OK	2020-05-23 11:37:48.585
Group 4	OK	OK	OK	OK	OK	OK	2020-05-23 11:37:48.785
Group 5	OK	OK	OK	OK	OK	OK	2020-05-23 11:37:58.227
Group 6	OK	OK	OK	OK	OK	OK	2020-05-23 11:37:58.469
Group 7	OK	OK	OK	OK	OK	OK	2020-05-23 11:38:21.448
Group 8	OK	OK	OK	OK	OK	OK	2020-05-23 11:38:22.006
Group 9	OK	OK	OK	OK	OK	OK	2020-05-23 11:38:27.165
Group 10	OK	OK	OK	OK	OK	OK	2020-05-23 11:38:27.369
Group 11	OK	OK	OK	OK	OK	OK	2020-05-23 11:39:11.535
Group 12	OK	OK	OK	OK	OK	OK	2020-05-23 11:39:13.358
Group 13	OK	OK	OK	OK	OK	OK	2020-05-23 11:40:42.923
Group 14	OK	OK	OK	OK	OK	OK	2020-05-23 11:40:43.277
Group 15	OK	OK	OK	OK	OK	OK	2020-05-24 00:00:00.000
Group 16	OK	OK	OK	OK	OK	OK	2020-05-24 00:00:00.000
Group 17	OK	OK	OK	OK	OK	OK	2020-05-24 00:00:00.000
Group 18	OK	OK	OK	OK	OK	OK	2020-05-24 00:00:00.000
Group 19	OK	OK	OK	OK	OK	OK	2020-05-24 00:00:00.000
Group 20	OK	OK	OK	OK	OK	OK	2020-05-24 00:00:00.000

10.5 Web Page Settings

Click on the **Settings** menu tab to visit the parameter setting web pages that can be configured from the AXM-WEB-PUSH module.

Each settings web page will require the AXM-WEB-PUSH module to be rebooted once the settings are saved in order for the changes to take effect. If users choose to reboot later they will need to do to from the Management.

NOTE: The Settings web page will only be accessible at Admin level.

ACCUENERGY

Dashboard11:12 AM - 04/01/20, 2020MeteringStatusSettingsLogout

Dashboard

Basic Metering

Average Voltage0.000 V

Average Line Voltage0.000 V

Average Current0.000 A

Frequency0.000 Hz

Full Report

THD

THD Voltage Average0.000 %

THD Current Average0.000 %

Full Report

Power & Energy

Total Power Factor

Total Apparent Power

Total Active Power

Import Active Energy723.752.3 kWh

Full Report

Max Demand

Maximum Apparent Power Demand60.000 kVA

Maximum Active Power Demand60.000 kW

Full Report

50

V: 1.36 Revised: June, 2020

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www.accuenergy.com

10.5.1 Meter Setting

The meter setting web page will allow user to configure basic meter settings in order for the meter to correctly read the voltage and current correctly.

Voltage Wiring: Select how the meter's voltage input terminal is wired by selecting a configuration from the drop down list. I.E. for a three phase three wire configuration without a neutral, select 3LL.

Current Wiring: Select the number of CT's that are connected to the meter's current input terminal by selecting a number from the drop down list.

PT1: Enter the rated input of the potential transformer that is connected to the meter. Possible range is from 50 to 50000V.

CT1: Enter the rated input of the current transformer that is used with the meter. Possible ranges for the CT1 is 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.

NOTE: This setting only effects the Modbus readings, the values read on the web interface and meters display will still remain the same.

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.

Settings Meter Save

Device Description

Voltage Wiring

3LN-Three Phase Four Wire Y

Current Wiring

3CT

PT1

400.0

Default 400, Range 50-1,000,000

CT1

1000

Default 5, Range 1-50,000

PT2

400.0

Default 400, Range 50-400

CT2

1A

Realtime Reading

☒ Secondary

☐ Primary

1A Direction

☒ Positive

☐ Negative

1B Direction

☒ Positive

☐ Negative

1C Direction

☒ Positive

☐ Negative

Save

11. Communications

The communication setting web page will allow the user to configure settings related to the Ethernet network. The functions that the AXM-WEB-PUSH support can be configured from this web page by selecting the corresponding tab such as Emails, Time/Date , Datalog, HTTP/FTP Post, AcuCloud Post for communicating with the AcuCloud software, SNMP, DNP3 and Remote Access.

11.1 WiFi Communication

NOTE: *WiFi function is only for the AXM-WiFi module.*

To access the WiFi settings, select the **Wi-Fi** tab from the **Communications** page.

The following settings need to be configured for using the WIFI:

- **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 Mode:** Is the default mode for the AXM-WIFI module, and will act as a wireless access point to allow other wireless devices to access the AXM-WiFi. In Access Point mode, users can configure the SSID, Network Key and IP of the AXM-WiFi module as well as the DHCP DNS servers.

The screenshot shows the 'Settings' page with the 'Communications' tab selected. Under the 'WiFi' sub-tab, the 'WiFi Enable' section has radio buttons for 'Disable' and 'Enable', with 'Enable' selected. The 'Mode' dropdown menu is set to 'Access Point'. Below this, there are input fields for 'SSID' (containing 'AXM-WIFI-LAM18040453'), 'Network Key', and 'IP' (containing '192.168.100.1'). There are also two 'DHCP DNS Server' fields: 'DHCP DNS Server 1' (containing '0.0.0.0', default '0.0.0.0') and 'DHCP DNS Server 2' (containing '0.0.0.0', default '0.0.0.0'). A green 'Save' button is at the bottom left of the settings area.

- **Station Mode:** AXM-WiFi 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-WiFi will bridge to.

NOTE: For connecting to an unencrypted open wireless network, please leave the Network Key field blank.

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-WiFi will be in parameter N11 of the NET settings on the Acuvim II display.

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

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

WiFi Enable

☐ Disable

☒ Enable

Mode

Station

Connect to SSID [Select from available networks](#)

AccueneEnergy-Guest

Network Key

DHCP

☒ Manual

☐ Auto

IP

192.168.1.10

Subnet Mask

255.255.255.0

Gateway

192.168.1.1

DHCP DNS Server 1

8.8.8.8

Default: 8.8.8.8

DHCP DNS Server 2

8.8.4.4

Default: 8.8.4.4

Save

11.2 Network

Under the network tab users can configure all network related settings for the module.

- **DHCP:** Select **Manual** to manually configure the IP address to access the meter. If set to Manual, user will also need to manually configure the Subnet Mask and Gateway. If **Auto** is selected, the meter will be assigned an IP address automatically and with this selection the Subnet Mask, Gateway will also be automatically assigned.

NOTE: After changing DHCP to Auto, check the display of the meter to obtain the new IP address that has been assigned after the AXM-WEB-PUSH 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.
- **DHCP DNS Server 1:** Enter the address of the DNS 1 server in this page.
- **DHCP DNS Server 2:** Enter the address of the DNS 2 server in this page.
- **Allow HTTP:** Enable this setting so that the AXM-WEB-PUSH can be accessed through HTTP at port 80.
- **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.

- **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.
- **Proxy Server Enabled:** Enable this setting so that the AXM-WEB-PUSH can act as an intermediary to communicate with another server.

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.

11.3 Emails

The AXM-WEB-PUSH supports the SMTP protocol so users can 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 personnel.

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 **Email** tab in the **Communications** page. To use this function the following settings need to be configured:

SMTP Enabled: Select **Yes** to enable and to further configure the settings related to the SMTP function.

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'


Authentication: Select the checkbox if using a ssl encrypted SMTP server, users will need to enter in the SMTP username and password. To use an unencrypted SMTP server, leave the checkbox unchecked.

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.

TLS/SSL: Check the TLS/SSL checkbox if the SMTP server is TLS/SSL encrypted.

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**.



Dashboard
9:24 AM - 04/01/2020
Metering
Status
Settings
Logout

Settings
Communications

Network
Email
Time/Date
Datalog
HTTP/FTP Post
AcuClient Post
SNMP
DNP3
Remote Access

SMTP Enable

☐ Disable
☒ Enable

Email Send Start Time

June 8, 2020 7:23 PM

SMTP Server

test server

SMTP Port

587

SMTP From

Accuenergy Technical Support

SMTP Subject

Test Data

☒ Authentication
SMTP Username

test@accuenergy.com

SMTP Password

☒ TLS/SSL

Test123@accuenergy.com

Test Address 1

SMTP To Address 2

test@gmail.com

Test Address 2

SMTP To Address 3

Test Address 3

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

To enable emails to be sent based on a new Alarm or SOE Event, select **Yes** under **SMTP Triggered Sending Alarm Event** or **SMTP Triggered Sending SOE Event**.

SMTP Triggered Sending Alarm Event

- ☐ No
☒ Yes

SMTP Triggered Sending SOE Event

- ☐ No
☒ Yes

To receive email reports at timed intervals, configure the following settings:

SMTP Timed Sending Interval: Configure this setting with a value between 5-1440 min. This represents how often the emails will be sent.

To receive emails on specific groups of parameters select **Yes** under **SMTP Timed Sending xxx**, where **xxx** represents the following metering groups that users can receive data:

- **Metering:** Report on real-time voltage, current, power and etc.
- **Energy:** Report on energy parameters.
- **Harmonics:** Report on the voltage and current harmonics from 2nd to 63rd.
- **Sequence:** 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.

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 in order for the changes to take effect.

The screenshot displays a web-based configuration interface for the AXM WEB PUSH feature. It contains several sections, each with a title and a radio button selection for 'No' or 'Yes'. The 'SMTP Timed Sending Interval' is set to 5. The 'SMTP Timed Sending Metering' is set to Yes. The 'SMTP Timed Sending Energy' is set to Yes. The 'SMTP Timed Sending Harmonics' is set to Yes. The 'SMTP Timed Sending Sequence' is set to Yes. The 'SMTP Timed Sending Min/Max' is set to Yes. The 'SMTP Timed Sending Alarms' is set to Yes. The 'SMTP Timed Sending SOE Record' is set to Yes. A green 'Save' button is located at the bottom left of the form.

SMTP Timed Sending Interval
5

SMTP Timed Sending Metering
☐ No
☒ Yes

SMTP Timed Sending Energy
☐ No
☒ Yes

SMTP Timed Sending Harmonics
☐ No
☒ Yes

SMTP Timed Sending Sequence
☐ No
☒ Yes

SMTP Timed Sending Min/Max
☐ No
☒ Yes

SMTP Timed Sending Alarms
☐ No
☒ Yes

SMTP Timed Sending SOE Record
☐ No
☒ Yes

Save

11.4 Time & Date

The device clock of the Acuvim II series meter can be set through the web interface of the AXM-WEB-PUSH module. The AXM-WEB-PUSH 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-WEB-PUSH can synchronize 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** menu tab and selecting **Communications**. From the communications page select **Time/Date** to access the web page.

The screenshot shows the Acuvim II Series AXM WEB PUSH web interface. At the top, there is a navigation bar with the 'ACCUENERGY' logo on the left and 'Dashboard', '9:46 AM -0400 08 Jun, 2020', 'Metering', 'Status', 'Settings', and 'Logout' on the right. Below the navigation bar, there is a 'Settings' tab selected, with a 'Communications' sub-tab. The 'Time/Date' sub-tab is also selected. The main content area shows the 'SNTP Enable' section with a radio button for 'Enable' selected. Below this is the 'Device Clock' section with a date and time field showing 'June 8, 2020 9:23 AM'. The 'Time Zone' section has a dropdown menu showing 'USA (Eastern)'. A 'Save' button is at the bottom left of the form.

SNTP Enable: Select **Yes** to enable the function and to further configure the settings related to the SNTP function.

Device Clock: The device clock of the Acuvim II series can be configured from this setting.

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.

SNTP Interval: Enter a number from 1 min to 6000 min to configure how often the meter will synchronize it's time with the time server.

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

Acuvim II Series - AXM WEB PUSH

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/>

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 in order for the setting change to take effect.

ACCUEnergy

Dashboard 10:00 AM 04/01/08 Jun, 2020 Metering Status Settings Logout

Settings Communications Save

Network Email TimeClock Datalog HTTP/FTP Post AccuCloud Post SNMP CNFS Remote Access

SNTP Enable

☐ Disable

☒ Enable

SNTP Interval (minutes)

60

range: 1-6000 minutes

SNTP Server 1

0.us.pool.ntp.org

SNTP Server 2

1.us.pool.ntp.org

SNTP Server 3

2.us.pool.ntp.org

Device Clock

June 8, 2020 10:00 AM

Time Zone

USA (Eastern)

Save

11.5 Datalog

The AXM-WEB-PUSH module supports logging data onto its memory which has 4GB of internal memory for storage. Once enabled users can configure the meter to log data daily or monthly.

The data can be downloaded as a .csv file using a sFTP client or simply from the meters web interface from the **Metering>Datalog** page.

Once logged into the AXM-WEB-PUSH interface, click on **Settings** tab menu on the top right of the interface and then select **Communications**. From there select the Data Log subheading.

Under **Data Upload** select **Enable** and then add the parameters required to be logged under the **Selected** chart.

The screenshot shows the AccuEnergy AXM WEB PUSH interface. At the top, there's a navigation bar with 'Dashboard', a timestamp '11:14 AM -0400 21 May, 2020', and several menu items: 'Metering', 'Status', 'Settings', and 'Logout'. Below this is a 'Settings' section with a 'Communications' sub-tab and a 'Save' button. The 'Datalog' tab is selected, showing 'Data Upload' options (Disable/Enable) and a 'Parameters' section with a 'Selected' list of parameters to be logged.

Data Upload

☐ Disable
☒ Enable

Parameters
Not selected

Selected

- Line-to-Neutral Voltage
- Line-to-Line Voltage
- Line Current
- Active Power
- Reactive Power
- Apparent Power
- Power Factor
- Frequency
- Import Active Energy
- Export Active Energy

Next, configure the following data log details:

Log Start Time: Select a valid time for the meter to start logging the data. Set this to the current date and time.

Log Interval: Select how frequently the module will log data to the file from the drop down list. The logging interval can range from 15 seconds to 1 month.

Backup File Length: Select the length of the log file as either 1 day or 1 month of data from the drop down list.


Backup File Prefix: Provide a name for the log file which will be appended to the beginning of the log file. By default, logger1 will be appended to the beginning of the log file.

NOTE: SFTP settings need to be configured only if you are retrieving the data logs via an FTP client.

- **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 password by clicking on **Reset SFTP Password**.

Once all settings are filled in, click **Save**, users will be required to reboot the AXM-WEB-PUSH module immediately or later. If later is selected the module must be rebooted from the **Management** page in order for the settings to be successfully saved.

Log Start Time
October 31, 2018 5:39 PM 

Log Interval
5 minutes ▼

Backup File Length
1 day ▼

Backup File Prefix (e.g., logger1-2017-10-01T09:46:1day.csv)
logger1

SFTP Enable
☐ Disable
☒ Enable

SFTP Username: sftpuser

SFTP Password

Default: accuenergy

[Reset SFTP Password](#)

[Save](#)

11.5.1 Downloading the Data Logs

The data logs can be downloaded directly from the AXM-WEB-PUSH interface.

To download the CSV files, click on the **Metering** header at the top right of the page, then click on the **Datalog** tab.

The following page will open, where you can click on each data log file to start downloading it. Users can also delete the data logs from the interface by clicking on the checkbox next to the data log and using the **Delete Selected** button.

ACCUENERGY

Dashboard11:43 AM - 0400 21 May, 2020Metering ▾Status ▾Settings ▾Logout

Datalog download

Select All	Files	Updated at	Size
<input type="checkbox"/>	logger1-2020-05-20T17-39-00-1day.csv	2020-05-21 11:39:03	112 KB
<input type="checkbox"/>	logger1-2020-05-19T17-39-00-1day.csv	2020-05-20 17:34:03	148 KB
<input type="checkbox"/>	logger1-2020-05-18T17-39-00-1day.csv	2020-05-19 17:34:03	148 KB
<input type="checkbox"/>	logger1-2020-05-17T17-39-00-1day.csv	2020-05-18 17:34:03	148 KB
<input type="checkbox"/>	logger1-2020-05-16T17-39-00-1day.csv	2020-05-17 17:34:03	148 KB
<input type="checkbox"/>	logger1-2020-05-15T17-39-00-1day.csv	2020-05-16 17:34:03	148 KB
<input type="checkbox"/>	logger1-2020-05-14T17-39-00-1day.csv	2020-05-15 17:34:03	148 KB
<input type="checkbox"/>	logger1-2020-05-13T17-39-00-1day.csv	2020-05-14 17:34:03	148 KB
<input type="checkbox"/>	logger1-2020-05-12T17-39-00-1day.csv	2020-05-13 17:34:03	148 KB
<input type="checkbox"/>	logger1-2020-05-11T17-39-00-1day.csv	2020-05-12 17:34:03	148 KB

Delete Selected

11.6 HTTP/FTP Post

The AXM-WEB-PUSH supports the HTTP and FTP Post functions to send data from the meter to a HTTP/FTP server. The AXM-WEB-PUSH can post .csv files to two different web servers using HTTP Post and can also send the same .csv file to a server using FTP Post.

In the case when the meter loses its internet connection, the AXM-WEB-PUSH will store up to 3000 posts and send it out after the connection is restored.

The AXM-WEB-PUSH can post data to a server at intervals of time ranging from 15 seconds to 1 month.

The settings for the HTTP/FTP Post function can be found by clicking on the **Settings** tab menu and selecting **Communications**. Click **HTTP/FTP Post** to access the HTTP/FTP Post web page.

The following settings must be configured in order to use the HTTP/FTP post function:

- **Data Upload:** To use the HTTP/FTP post function to send data to the appropriate server, select the **Enable** option to view and configure the settings that are applicable.

Once enabled the following settings related to data upload will begin, and will include how often the data should be logged and uploaded, the format of the file name and how the time stamp will be represented.

- **Log Start Time:** Select a valid time for the meter to start logging the data to be posted.

NOTE: The device clock of the meter should be correctly configured and up to date.

- **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 set from 15 seconds to 1 month.
- **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.
- **Push File Prefix:** Provide a name for the log file which will be appended to the beginning of the log file if the **Time Interval Format** setting is selected as the **Post File Name Format**. By default logger1 will be appended to the beginning of the log file.
- **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 15 seconds to 1 month.

NOTE: The log file length must be greater or equal to the logging interval.

The screenshot shows the 'Settings' page for the AccuEnergy AXM Web Push interface. The 'HTTP/FTP Post' tab is selected. The settings are as follows:

- Data Upload:** Enabled (radio button selected).
- Log Start Time:** June 8, 2020 10:50 AM.
- Log Interval:** 5 minutes.
- Timestamp Format:** Local Time String (e.g., 2017-01-01 10:00:00).
- Push File Prefix:** logger1.
- Post File Length:** 5 minutes.
- Post File Name Format:** Old Format (For FTP, use UTC timestamp like 1444873000.csv, while, for HTTP, always use MAC address like ecc58a100001.csv).

11.6.1 HTTP Post

With the above settings configured the following settings need to be configured depending on which protocol will be used:

- **HTTP Push Channel 1 Enable:** Select **Yes** to enable and to further configure the HTTP Push 1 settings.
- **HTTP Push 1 Meter Upload Url:** Enter the Url of the HTTP server that will receive the data from the meter.
- **HTTP Push 1 Port:** Enter the port number for the server that will receive the data.
- **HTTP Push 1 Password:** Enter the password to send data to the receiving server if applicable. Otherwise, leave blank.
- **HTTP Push 1 Interval:** Select how frequently the data should be uploaded to the HTTP server. The data can be posted in intervals from 15 seconds to 1 month.

HTTP Push Channel 1 Enable

☐ No

☒ Yes

HTTP Push 1 Meter Id

HTTP Push 1 Meter Upload Url

HTTP Push 1 Port

HTTP Push 1 Password

HTTP Push 1 Interval

Test HTTP Push 1

Clear HTTP Push 1 Log

NOTE: The "TEST HTTP Push1" 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', double check the post settings, time settings and the network settings.

In the case the network is down and the module cannot send the data to the server it will accumulate all the failed posts (up to 3000 posts) and send them out when the network is back up and running. These failed posts can be cleared by clicking the **Clear HTTP Push Logs**.

- **HTTP Push Channel 2 Enable:** Select 'Yes' to enable and to further configure the HTTP Push 2 settings.
- **HTTP Push 2 Meter Upload Url:** Enter the Url of the HTTP server that will receive the data from the meter.
- **HTTP Push 2 Port:** Enter the port number for the server that will receive the data.
- **HTTP Push 2 Password:** Enter the password to send data to the receiving server if applicable. Otherwise, leave blank.
- **HTTP Push 2 Interval:** Select how frequently the data should be uploaded to the HTTP server. The data can be posted in intervals from 15 seconds to 1 month.

HTTP Push Channel 2 Enable

- ☐ No
☒ Yes

HTTP Push 2 Meter Id

Test2

HTTP Push 2 Meter Upload Uri

http.test2.server

HTTP Push 2 Port

80

HTTP Push 2 Password

HTTP Push 2 Interval

5 minutes

Test HTTP Push 2

Clear HTTP Push 2 Logs

11.6.2 FTP Post

- **FTP Push Enable:** Select 'Yes' to enable and further configure the FTP Push settings.
- **FTP Push Meter Upload Url:** Enter the Url of the FTP server that will receive the data from the meter.
- **FTP Push Port:** Enter the port number for the server that will receive the data.
- **FTP Push Username:** Enter a valid username to send the data to the FTP server. An incorrect username could result in no data being received by the server.
- **FTP Push Password:** Enter a valid password for the username above to send data to the receiving FTP server.
- **FTP Push Interval:** Select how frequently the data should be uploaded to the FTP server. The data can be posted in intervals from 15 sec to 1 month.

NOTE: The "TEST FTP Push" 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 settings should be double checked or troubleshooting on the server side may be required.

In the case the network or FTP server is down and the module cannot send the data to the server it will accumulate all the failed posts and send them out when the network is up. These failed posts can be cleared by clicking the **Clear FTP Push Logs**.

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 in order for the settings to take effect.

FTP Push Enable

☐ No

☒ Yes

FTP Push Uri

ftp.test.server

FTP Push Port

21

FTP Push Username

admin

FTP Push Password

FTP Push Interval

5 minutes

Test FTP Push

Clear FTP Push Logs

Save

11.7 AcuCloud Post

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

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

The settings for the AcuCloud Post function can be found by clicking on the **Settings** tab menu and selecting **Communications**. Select **AcuCloud Post** to access the settings to configure the AXM-WEB-PUSH to send data to AcuCloud.

NOTE: Users will need an AcuCloud account before they can configure the module to post data to the cloud. Please contact Accuenergy Technical Support in order to get account setup.

- **AcuCloud Reporting:** Select **Enable** to enable the function and to further configure the settings related to AcuCloud.
- **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-WEB-PUSH immediately or later. If later is chosen the AXM-WEB-PUSH will need to be rebooted from the **Management** page in order for the settings to take effect.

In the case the network is down and the module cannot send the data to the server it will accumulate all the failed posts (up to 3000 posts) and send them out when the network is back up and running. These failed posts can be cleared by clicking the **Clear AcuCloud Post Logs**.

The screenshot shows the 'Settings' page for 'Communications' in the Accuenergy web interface. The 'AcuCloud Post' tab is selected. Under 'AcuCloud Reporting', the 'Enable' radio button is selected. The 'Ethernet Module Serial Number' is set to 'AM20200520'. The 'AcuCloud Token' field contains the value '0c413027-2275-443f-8b15-7b4e16235e1d'. At the bottom, there are buttons for 'Test AcuCloud', 'Clear AcuCloud Post Logs', and 'Save'.

11.8 SNMP

The AXM-WEB-PUSH module supports the Simple Network Management Protocol (SNMP) protocol for reporting the metering data to the management station. The AXM-WEB-PUSH uses a public community string for read-only access. By default the module will communicate using SNMP port 161. The module also supports traps to send unsolicited messages to up to four management stations. The trap event could be triggered by a change in Digital Input Status and alarm status.

The settings for the SNMP protocol can be found by clicking on the **Settings** menu tab and selecting **Communications**. Select SNMP to access the settings to configure the AXM-WEB-PUSH 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.
- **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.
- **SNMP Port:** By default the SNMP Port is configured to 161. The SNMP Port can be any

The screenshot shows the AccuEnergy AXM WEB PUSH settings interface. At the top, there is a navigation bar with the AccuEnergy logo, a dashboard link, and a timestamp of 11:54 AM -0400 08 Jun 2020. Below the navigation bar, the 'Settings' menu is open, showing 'Communications' as the selected option. The 'SNMP' tab is highlighted in the sub-menu. The 'SNMP Enable' section has two radio buttons: 'Disable' and 'Enable', with 'Enable' selected. The 'Read Only Community' section has a text input field containing 'public'. The 'SNMP Port' section has a text input field containing '161'. At the bottom, there is a note: 'Default: 161, Range 16100-16199'.

- **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 triggered by a change in Digital Input Status and alarm status. The notification can then be sent to up to 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.

Trap Enable

☐ Disable

☒ Enable

Trap Target 1

Trap Target 2

Trap Target 3

Trap Target 4

Report Buffer Size

Range 0-30

Report Hold Time

Range 0-300

11.9 DNP

The AXM-WEB-PUSH 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 **DNP3** to access the settings to configure the AXM-WEB-PUSH to communicate with a DNP master.

The following settings will need to be configured in order to use the DNP function.

- **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.
- **Source address validation:** By default the validation is disabled, select 'Enable' to enable the destination address validation.
- **Master link address:** Enter the address number of the master device.
- **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.
- **Support for broadcast functionality:** In DNP there three broadcasting addresses that are supported. Enabling this setting would allow the module to respond to requests (from the client) sending them to the broadcasting addresses.



Settings Communications

Save

Network Email Time/Date Datalog HTTP/FTP Post AccuCloud Post SNMP **DNP3** Remote Access

DNP3 Enable

- ☐ Disable
☒ Enable

TCP/IP mode

TCP & UDP

Local TCP port

20000
range: 20000-22000

Local UDP port

20000
range: 20000-22000, 0 to disable UDP

Destination IP address

note: use "*" to allow all incoming requests

Dual endpoint IP port

20000
range: 1-65535

Destination UDP port for initial unsolicited null responses

20000
range: 1-65535

Destination UDP port for response

20000
range: 1-65535

Link address

4
range: 1-65519

Source address validation

- ☒ Never
☐ Always

Master link address

3
range: 1-65519

Self address support

- ☒ No
☐ Yes

Sends confirmed user data frames

- ☒ Never
☐ Only for multiframe message fragments
☐ Always

Time sync period

1800
range: 1-86400 (seconds)

Supports Unsolicited Reporting

- ☐ Off
☒ On

Number of Unsolicited Retries

- ☐ 0
☒ 10
☐ inf

Unsolicited response trigger Condition: Num of class 1 events

0
range: 0-255

Unsolicited response trigger Condition: Num of class 2 events

0
range: 0-255

Unsolicited response trigger Condition: Num of class 3 events

0
range: 0-255

Unsolicited response trigger Condition: Hold time after class 1 events

0
range: 0-86400000 (milliseconds)

Unsolicited response trigger Condition: Hold time after class 2 events

0
range: 0-86400000 (milliseconds)

Unsolicited response trigger Condition: Hold time after class 3 events

0
range: 0-86400000 (milliseconds)

Support for broadcast functionality

- ☐ Enable
☒ Disable

DNP3 Point Configuration

Users can assign certain parameters to either class 1, class 2 or class 3.

The scale factor is a multiplier that can be applied to a certain parameter when viewing the readings.

An offset can be applied to the reading.

The dead band can be set for each parameter, where if the value of the parameter exceeds the dead band value a DNP event will occur.

DNP3 Point Configuration

Analog-Input: Realtime

Batch Modify

Point Number	Description	Class 1	Class 2	Class 3	Scale Factor	Scale Offset	Deadband
0	System Frequency	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1	0	0
1	Phase A Line-to-Neutral Voltage	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10	2	3
2	Phase B Line-to-Neutral Voltage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1	0	0
3	Phase C Line-to-Neutral Voltage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1	0	0
4	Average Line-to-Neutral Voltage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1	0	0
5	Phase A-B Line-to-Line Voltage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1	0	0
6	Phase B-C Line-to-Line Voltage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1	0	0
7	Phase C-A Line-to-Line Voltage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1	0	0
8	Average Line-to-Line Voltage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1	0	0
9	Phase A Line Current	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1	0	0

Users can use the **Batch Modify** button to apply certain settings to all parameters instead of individually configuring each point.

Once the configuration in the batch modify is complete click on **Save changes**.

Analog-Input: Realtime

Batch Modify

Description	Class 1	Class 2	Class 3	Scale Factor	Scale Offset	Deadband
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4	2	100

Close Save changes

Point Number	Description	Class 1	Class 2	Class 3	Scale Factor	Scale Offset	Deadband
0	System Frequency	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1	0	0
1	Phase A Line-to-Neutral Voltage	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10	2	3
2	Phase B Line-to-Neutral Voltage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1	0	0
3	Phase C Line-to-Neutral Voltage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1	0	0
4	Average Line-to-Neutral Voltage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1	0	0
5	Phase A-B Line-to-Line Voltage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1	0	0
6	Phase B-C Line-to-Line Voltage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1	0	0
7	Phase C-A Line-to-Line Voltage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1	0	0
8	Average Line-to-Line Voltage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1	0	0
9	Phase A Line Current	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1	0	0
10	Phase B Line Current	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1	0	0
11	Phase C Line Current	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1	0	0
12	Average Line Current	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1	0	0

After all DNP settings are complete, click on **Save**. Users will be prompted to reboot the AXM-WEB-PUSH immediately or later. If later is chosen the AXM-WEB-PUSH must be rebooted from the **Management** page in order for the settings to take effect.

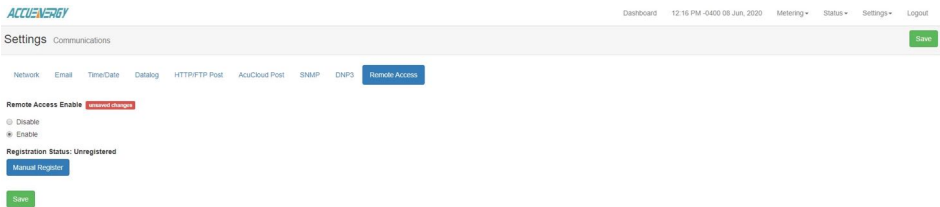
11.10 Remote Access

The AXM-WEB-PUSH has a remote access function. This will allow users to provide other users with remote access to the meters web interface. Users will have full functionality and access to all meter readings and settings with this function.

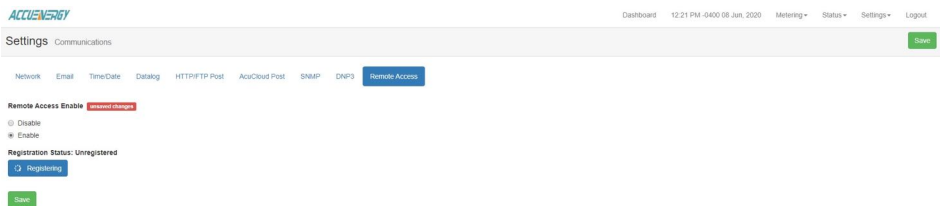
Once logged into the AXM-WEB-PUSH interface, click on **Settings** on the top right, then select the **Communications** tab. Next click on the **Remote Access** subheading. The following settings must be configured in order to use this function.

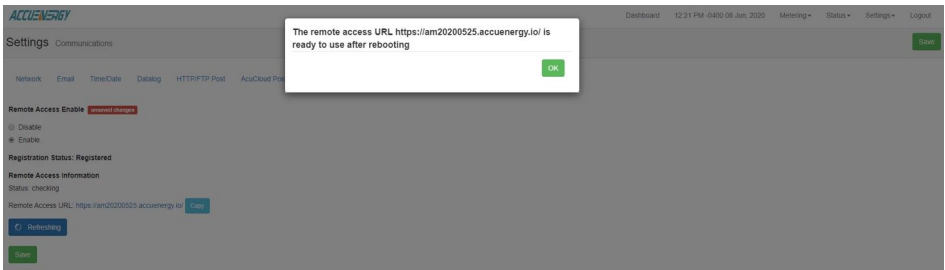
The following settings will need to be configured in order to use the DNP function.

- **Remote Access Enable:** Select 'Enable' to enable the function and allow for Remote Access.
- **Current Status:** Will provide user with a status of the Remote Access on whether it is **Registered** or **Unregistered**.



Users can click on the **Manual Register** button to register the remote access. The following pages will be displayed.



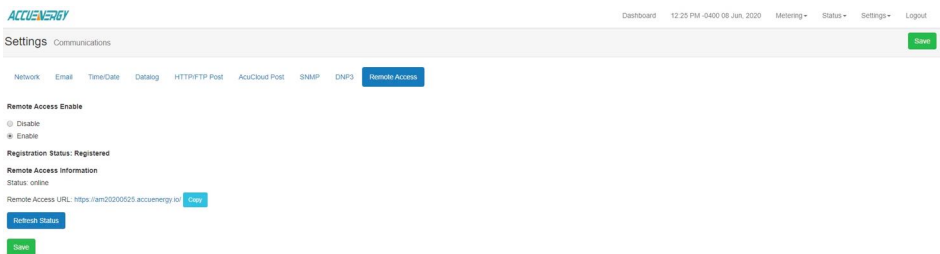


NOTE: The module must be rebooted in order for the remote access connection to work properly.

Registration Status: Displays the status as **Registered** or **Unregistered**.

Remote Access Information: Lets users know if the remote access status is online or offline.

Remote Access URL: The URL used to access the meters web server remotely. This URL can be copied and shared with all users that require the remote access.



11.11 Import/Export Configuration

Users can import and export settings from a Acuvim II meter by using Import/Export function. This page can be accessed by clicking on the **Setting** menu tab and selecting **Import/Export**. This allows users to export and import the following settings from and to the AXM-WEB-PUSH module:

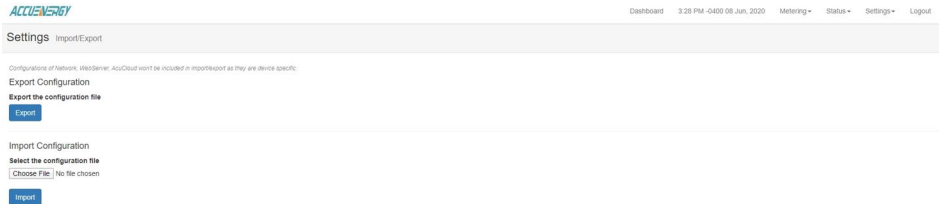
- All Meter settings (Wiring, CT/PT Ratio, CT Direction, Real time reading mode)
 - Network settings (Only DNS1, DNS2, Modbus TCP Port, HTTP Proxy)
 - All Email settings
 - All Time/Date settings
 - All Data Log settings
 - All Post Channel settings (HTTP/FTP)
 - All SNMP settings
 - All DNP settings (Point configuration will also be applied)
 - Management settings (the View and Admin Access Level passwords)
- The following settings

The following settings and configurations will **NOT** be included in the import/export function:

- Most Network settings (DHCP, IP, Submask, Gateway, HTTP Port, All WiFi settings for AXM-WIFI, HTTP enable, and HTTPS port are not changed)
- AcuCloud
- Remote Access

11.11.1 Export Configuration

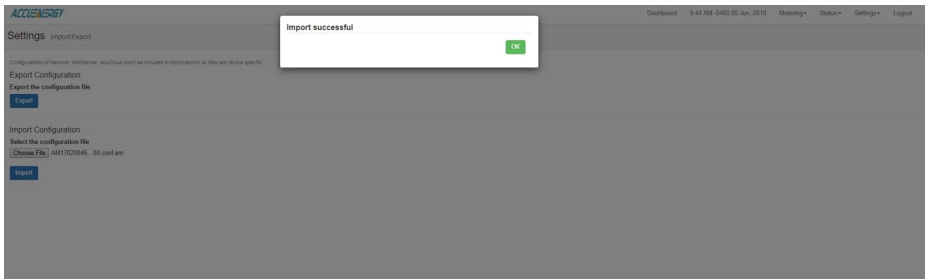
The configuration file can be downloaded and saved in the computer by clicking on **Export** button. The exported file has the **.conf.am** format.



11.11.2 Import Configuration

The configuration can be imported by using a **.conf.am** file.

After the configuration is successfully imported, a message will show up.



NOTE: Configurations of Network, Web Server, AcuCloud won't be included in import/export as they are device specific.

12. Management

12.1 Parameter Reset

The Management web page allows the user to clear and reset certain parameters in the meter. The following parameters can be reset from the Management page:

The web interface allows for remote initial setup of the Acuvim II meter. The AXM-WEB-PUSH web interface allows for different user access levels.

- **Demand**
- **Energy**
- **Max and Min**
- **Alarm Record**
- **Device Run Time**

ACCUENERGY		Dashboard	12:29 PM -0400 08 Jun, 2020	Metering	Status	Settings	Logout
Settings Management							
Setting	Action						
Reset Demand							Reset
Reset Energy							Reset
Reset Max and Min							Reset
Reset Alarm Record							Reset
Reboot Communications Module							Reboot
Device Clock							12:29 PM -0400 08 Jun, 2020
Reset Device Run Time							Reset

12.2 Reboot Meter & Communications Module

Users can also reboot the web module and meter which is required after any communication or meter setting is changed, if a module reboot is not performed the settings will not be saved to the meter and will go back to its default settings. This not only resets the communication module, it also performs a soft reboot on the Acuvim II meter.

Reboot Communications Module	Reboot
------------------------------	--------

12.3 Change Password

The access level passwords can be changed from the Management page as well, all new passwords must be 6 characters or more.

Reset Admin Password

Enter new password

Show password

Save

Reset View Password

Enter new password

Show password

Save

12.4 Diagnostic File

There is a diagnostic file on the AXM-WEB-PUSH module that users can download which can be used to analyze the modules diagnostics. The download diagnostic button is located at the bottom of the Management page.

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

Setting	Action
Reset Demand	<div>Reset</div>
Reset Energy	<div>Reset</div>
Reset Max and Min	<div>Reset</div>
Reset Alarm Record	<div>Reset</div>
Reboot Communications Module	<div>Reboot</div>
Device Clock	12:29 PM -0400 08 Jun, 2020
Reset Device Run Time	<div>Reset</div>
Live API Token	
Reset API Token	<div>Reset</div>
Reset Admin Password	<div><div>Enter new password</div><div>Show password</div><div>Save</div></div>
Reset View Password	<div><div>Enter new password</div><div>Show password</div><div>Save</div></div>

Download diagnostic file

13. Network Diagnostic

The network diagnostic page can be used to check the Ethernet Status, host lookup and test the connection. On the Ethernet status page, it shows the Ethernet network status, routing table, DNS server and Network stat.

13.1 Network Status

Networking Status
Host Lookup
Connection Test

Ethernet Network

```

eth0  Link: eno1:Ethernet 0-Header: EC:C1:8A:20:00:0C
      Link: eno1:192.168.1.220  Peer: 0.0.0.0  Peer: 255.255.255.0
      UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
      RX packets:1247 errors:0 dropped:0 overruns:0 frame:0
      TX packets:124 errors:0 dropped:0 overruns:0 carrier:0
      collisions:0 txqueuelen:1000
      RX bytes:78127 (80.4 KiB)  TX bytes:18329 (17.8 KiB)
      Interrupt:105 Base address:0x0000 000, checksum:

lo    Link: eno1:Local 0-Header:
      Link: eno1:127.0.0.1  Peer: 255.0.0.0
      UP LOOPBACK RUNNING  MTU:65536  Metric:1
      RX packets:0 errors:0 dropped:0 overruns:0 frame:0
      TX packets:0 errors:0 dropped:0 overruns:0 carrier:0
      collisions:0 txqueuelen:0
      RX bytes:0 (0.0 B)  TX bytes:0 (0.0 B)

```

Release

Routing Table

```

Kernel IP routing table
Destination    Gateway      Genmask      Flags Metric Ref  Use Iface
0.0.0.0        192.168.1.1  0.0.0.0      000 0      0  0 eth0
192.168.1.0    0.0.0.0      255.255.255.0 000 0      0  0 eth0

```

DNS Server

```

nameserver 8.8.8.8
nameserver 8.8.4.4

```

Network Stat

```

netstat -sno: /proc/net/route: No such file or directory
netstat -sno: /proc/net/route: No such file or directory
Ips Address      State
tcp              0  0  0.0.0.0:80      0.0.0.0:*      LISTEN
tcp              0  0  0.0.0.0:8080   0.0.0.0:*      LISTEN
tcp              0  0  0.0.0.0:22     0.0.0.0:*      LISTEN
tcp              0  0  0.0.0.0:443    0.0.0.0:*      LISTEN
tcp              0  0  0.192.168.1:220 0.192.168.1:15004  ESTABLISHED
tcp              0  0  0.192.168.1:220 0.192.168.1:15002  ESTABLISHED
tcp              0  0  0.192.168.1:220 0.192.168.1:15008  ESTABLISHED
tcp              0  0  0.192.168.1:220 0.192.168.1:15005  ESTABLISHED
udp              0  0  0.0.0.0:51500  0.0.0.0:*
udp              0  0  0.0.0.0:51510  0.0.0.0:*
udp              0  0  0.0.0.0:51515  0.0.0.0:*

```

AXM-WEB can be used to lookup a system or domain. By using the host lookup function, users can nslookup, ping and traceroute a domain.

13.2 Host Lookup

Settings

Network Diagnostic

Networking Status

Host Lookup

Connection Test

Name of system or domain name to lookup

valid ip or domain name

☐ nslookup
 ☐ ping
 ☐ traceroute

Lookup

Networking Status

Host Lookup

Connection Test

Name of system or domain name to lookup

valid ip or domain name

☒ nslookup
 ☒ ping
 ☒ traceroute (it may take 1-2 minutes to complete)

Lookup

Nslookup

Server: 8.8.8.8

Address 1: 8.8.8.8 google-public-dns-a.google.com

Name: www.google.com

Address 1: 172.217.165.4 yyc12a06-in-44.1e100.net

Address 2: 2607:f800:4800:809:12004:yyz18a04-in-x04.1e100.net

Ping

PING www.google.com (172.217.1.4): 56 data bytes

64 bytes from 172.217.1.4: seq=0 ttl=54 time=0.812 ms

64 bytes from 172.217.1.4: seq=1 ttl=54 time=0.000 ms

64 bytes from 172.217.1.4: seq=2 ttl=54 time=0.000 ms

64 bytes from 172.217.1.4: seq=3 ttl=54 time=0.000 ms

64 bytes from 172.217.1.4: seq=4 ttl=54 time=0.000 ms

www.google.com ping statistics ---

5 packets transmitted, 5 packets received, 0% packet loss

round-trip min/avg/max = 0.000/1.562/7.812 ms

Traceroute

traceroute to www.google.com (172.217.165.4), 30 hops max, 36 byte packets

1 192.168.1.1 (192.168.1.1) 0.000 ms 0.000 ms 0.000 ms

2 1n13-toronto03_108_symp.net.bell.ca (64.230.11.21) 0.000 ms 0.000 ms 0.000 ms

3 cl160-toronto03_30g64-1-0-net.bell.ca (64.230.103.72) 0.000 ms 0.000 ms 0.000 ms

4 tcore3-toronto03_2-1-0-0-net.bell.ca (64.230.106.100) 15.625 ms tcore6-toronto03_2-1-0-0-net.bell.ca (64.230.106.102) 15.625 ms tcore3-toronto03_2-1-0-0-net.bell.ca (64.230.106.100) 7.813 ms

5 tcore1-toronto0n_w21.net.bell.ca (64.230.51.152) 7.812 ms * 0.000 ms

6 nx3-toronto0n_hundredgigeb-1-0-0-net.bell.ca (64.230.97.345) 7.812 ms nx3-toronto0n_hundredgigeb-2-0-0-net.bell.ca (64.230.97.147) 7.813 ms 7.813 ms

7 * * *

8 * * *

9 216.239.42.158 (216.239.42.158) 0.000 ms 7.813 ms yyc12a06-in-44.1e100.net (172.217.165.4) 7.812 ms

If users have issue of AcuCloud, email or HTTP/FTP post, it may related to the internet connection. To verify the connection is working, we can use the connection test here.

13.3 Connection Test

Settings Network Diagnostic

Networking Status Host Lookup Connection Test

This diagnostic page will attempt a connection to the specified network nodes.

In the process, all network settings will be tested and a report will be given with detailed results of these tests.

Begin Test

Networking Status Host Lookup Connection Test

This diagnostic page will attempt a connection to the specified network nodes.

In the process, all network settings will be tested and a report will be given with detailed results of these tests.

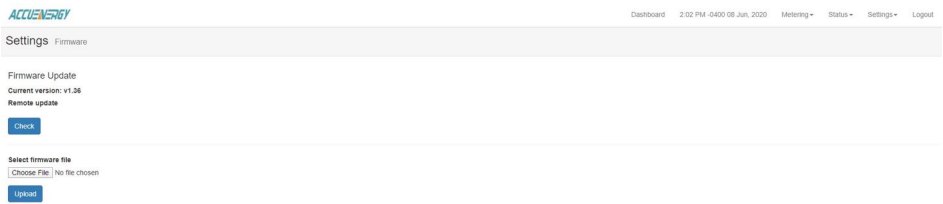
Begin Test

Loop Back Address #
PING 127.0.0.1 SUCCESS
Gateway #
PING 192.168.1.1 SUCCESS
IP1 #
PING 8.8.8.8 SUCCESS
IP2 #
PING 8.8.4.4 SUCCESS

TEST COMPLETE 4/4 PASS

14. Firmware Update

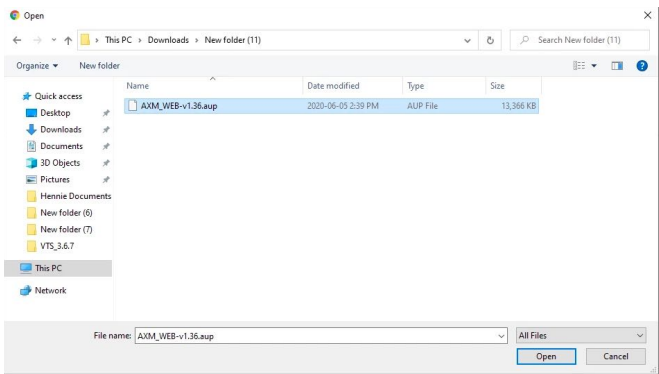
The Firmware web page is used for updating the firmware version on the AXM-WEB-PUSH module. There are two methods in which the module firmware can be updated, either manually or remotely. When using the remote server users can check to see if their firmware is running the latest firmware and update if necessary. Alternatively users can contact Accuenergy Technical Support who will then be able to provide the the latest firmware for the update, if using this method users should provide the current firmware version of the AXM-WEB-PUSH module which can be found from the Device Information page.

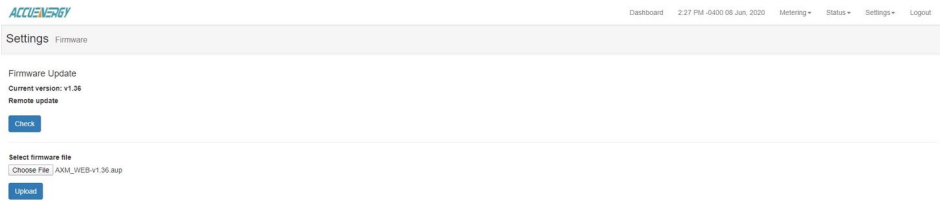


14.1 Manual Firmware Update

To update the module firmware manually select and upload the AXM-WEB-PUSH firmware file, it is a .aup file extension.

Once the file is selected click on **Upload**.





ACCUEnergy

Dashboard 2:27 PM -0400 08 Jun, 2020 Metering Status Settings Logout

Settings Firmware

Firmware Update
Current version: v1.36
Remote update

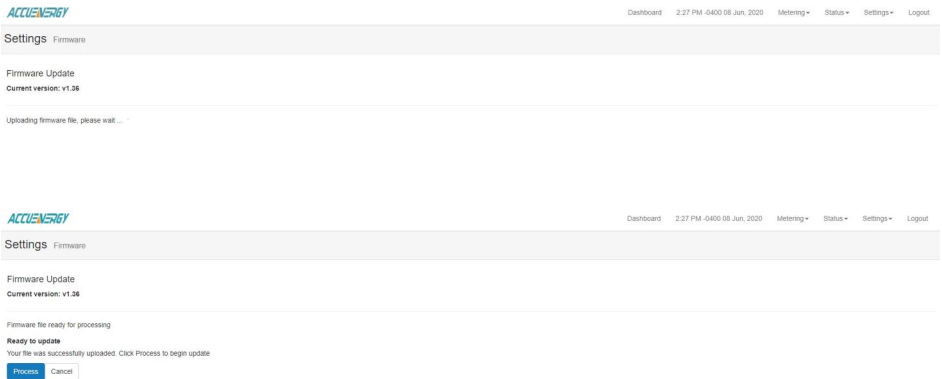
Check

Select firmware file
Choose File | AXM_WEB-v1.36.aup

Upload

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

Click **Process** to begin the update.



ACCUEnergy

Dashboard 2:27 PM -0400 08 Jun, 2020 Metering Status Settings Logout

Settings Firmware

Firmware Update
Current version: v1.36

Uploading firmware file, please wait ...

ACCUEnergy

Dashboard 2:27 PM -0400 08 Jun, 2020 Metering Status Settings Logout

Settings Firmware

Firmware Update
Current version: v1.36

Firmware file ready for processing
Ready to update
Your file was successfully uploaded. Click Process to begin update

Process Cancel

The update will begin and you will see the following message: **Firmware update in progress.**



ACCUEnergy

Dashboard 2:27 PM -0400 08 Jun, 2020 Metering Status Settings Logout

Settings Firmware

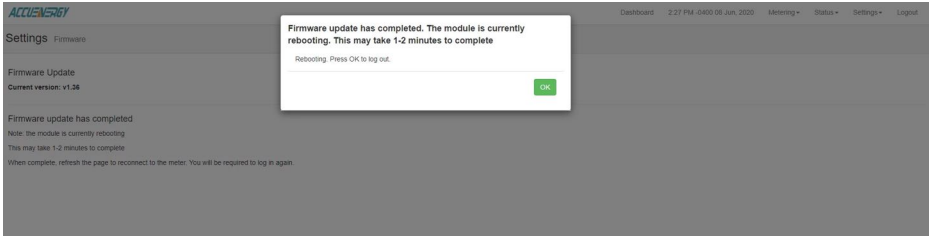
Firmware Update
Current version: v1.36

Updating firmware, please wait ... *

Firmware update in progress
Please note, this may take several minutes to complete

Once the update is complete, you will see the following page.

NOTE: The module is currently rebooting. This may take 1-2 minutes to complete. When complete, refresh the page to reconnect to the meter. You will be required to log in again.



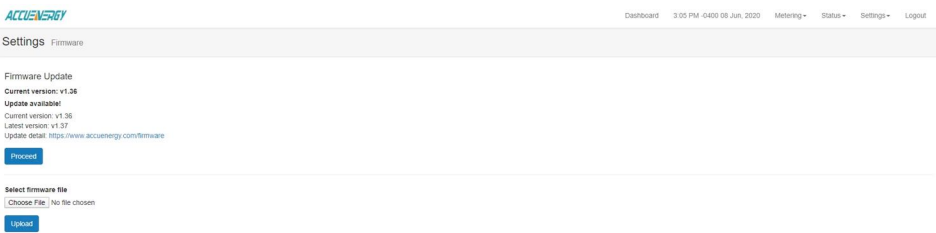
Login to the web interface of AXM-WEB-PUSH after the reboot is complete, and go to the **About** page to check if the module firmware version number is updated successfully.

14.2 Remote Firmware Update

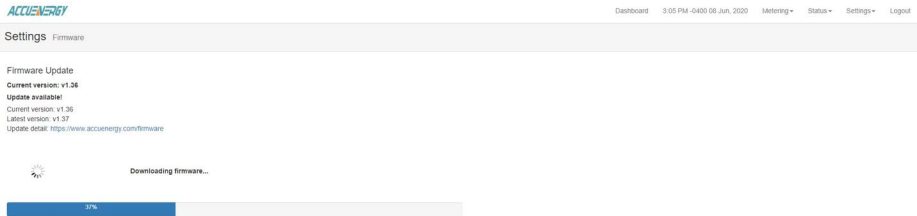
Users can also use the remote firmware server to update the module firmware. Click on **Check** to verify if there is a firmware update available.

If an update is available, click on **Proceed** to begin the update.

NOTE: Users must have the meter connected to the Internet in order to use the Remote Firmware Update function.



The firmware will be downloaded from the remote server.



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Dashboard 3:05 PM -0400 08 Jun, 2020 Metering Status Settings Logout

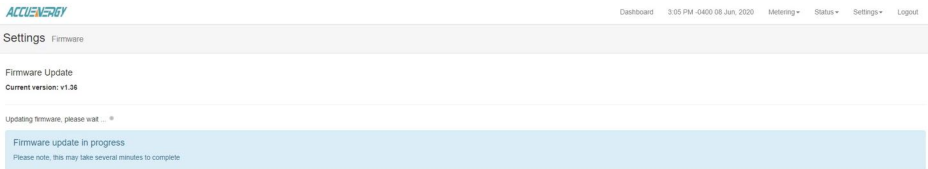
Settings Firmware

Firmware Update
Current version: v1.36
Update available!
Current version: v1.36
Latest version: v1.37
Update detail: <https://www.accuenergy.com/firmware>

Downloading firmware...

57%

Once the firmware has been downloaded, the updating process will begin.



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Dashboard 3:05 PM -0400 08 Jun, 2020 Metering Status Settings Logout

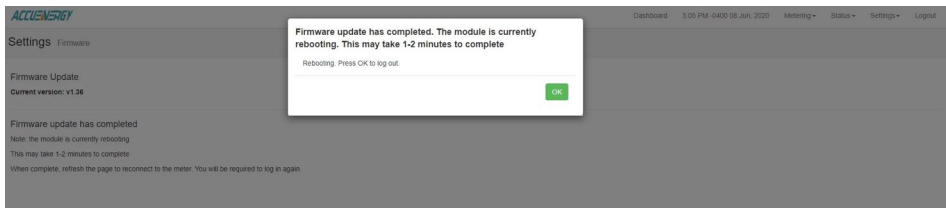
Settings Firmware

Firmware Update
Current version: v1.36

Updating firmware, please wait ...

Firmware update in progress
Please note: this may take several minutes to complete

After the firmware update the module will reboot, this will take approximately 1-2 minutes to complete.



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Dashboard 3:05 PM -0400 08 Jun, 2020 Metering Status Settings Logout

Settings Firmware

Firmware Update
Current version: v1.36

Firmware update has completed
Note: the module is currently rebooting
This may take 1-2 minutes to complete
When complete, refresh the page to reconnect to the meter. You will be required to log in again.

Firmware update has completed. The module is currently rebooting. This may take 1-2 minutes to complete
Rebooting. Press OK to log out.

OK



MAKE ENERGY USAGE SMARTER

ACCUENERGY (CANADA) INC.

22 Howden Road
Toronto, ON M1R 3E4, Canada

TF: 1-877-721-8908
INT: +1-416-497-4100
FAX: +1-416-497-4130
E: marketing@accuenergy.com

ACCUENERGY SOUTH AFRICA (PTY) LTD.

Castle Walk Corporate Park, Block B,
Cnr. Nossob & Swakop Street
Erasmuskloof, Pretoria, 0181 South Africa

TF: +27 (0) 87 802 6136

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(603) 746-5524

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