

# **AXM-WEB2** Acuvim II/ Acuvim-L Communications Module



# DATASHEET

### AXM-WEB2

Dual Ethernet and Wi-Fi Communication Module Datasheet



AXM-WEB2 includes dual Ethernet ports and Wi-Fi communication channel for the Acuvim II and Acuvim-L Series power meters. Multi-protocols are supported such as IEC61850 2nd Ed., Modbus, MQTT, Google IoT, BACnet, and DNP3 V2.



### Accuenergy Inc.

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Revision Date: February 2024 Version: 2.0.0 Specs Subject To Change Without Notice.

## ACCUENERGY

#### Communication

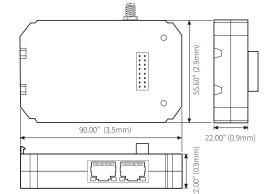
| Meter Series | Acuvim II, Acuvim-L  |
|--------------|--|
| Ethernet     | LAN Dual RJ45 10/100M Ethernet   |
| Wi-Fi        | 2.4GHz,5GHz  |
| Protocols    | IEC 61850 2nd Ed., EtherNet/IP, Mod-<br>bus-TCP/IP, BACnet-IP, SNMP V3, DNP 3.0<br>V2, RSTP, SMTP, NTP Synchronization, HTTP/<br>HTTPs post, FTP post, sFTP server, HTTPs<br>webserver, Google IoT, MQTT |

#### Features

- Dual Ethernet ports and Wi-Fi works simultaneously with different networks & DAQ systems. RJ45 supports individual network configuration COMTRADE file format for waveform capture and event data of electrical power systems
- + 8 GB onboard memory with 1-second interval datalogging capabilities. Metering data backup log to avoid data loss during network downtime
- Industry leading Fast Read mode at 100ms and 20ms response rate via Modbus-TCP/IP protocol for real-time data updates

- Secure TLS1.2/SSL compliant encrypted webserver for industry-leading cybersecurity standard EtherNet/IP and IEC 61850 protocol support for industrial automation, utility and substation
- + Remote access to WEB2 dashboard interface for realtime meter data, trend analysis, harmonics, waveform in graph and tabular format Wi-Fi supports Access Point mode and Station mode for both direct connection/configuration and public Wi-Fi network connection

#### Dimensions



### **Ordering Information**

|                   | Module Type | - | Protocol |                              |
|-------------------|-------------|---|----------|------------------------------|
| Ordering Example: | AXM-WEB2    |   |          |                              |
|                   | AXM         |   | WEB2     | Two Ethernet<br>ports, Wi-Fi |

## AXM-WEB2 FOLC

Fiber Optics, Ethernet, & Wi-Fi Communication Module Datasheet



AXM-WEB2 FOLC provides fast Fiber Optics LC port, single Ethernet port and Wi-Fi communication channel for the Acuvim II and Acuvim-L Series power meter. Multiprotocols are supported such as IEC 61850 2nd Ed., EtherNet/IP, Modbus, BACnet, DNP3 V2, Google IoT, and MQTT.



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### Communication

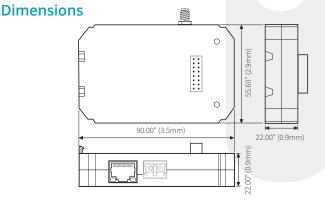
| Meter Series                | Acuvim II, Acuvim-L   |
|-----------------------------|---|
| Fiber Optics Connector Type | LC  |
| Wavelength                  | 1310nm  |
| Optical Fiber Details       | Multimode 62.5/125 µm and 50/125 µm   |
| Ethernet                    | LAN RJ45 10/100M Ethernet   |
| Wi-Fi                       | 2.4GHz, 5GHz  |
| Protocols                   | IEC 61850 2nd Ed., EtherNet/IP, Mod-<br>bus-TCP/IP, BACnet-IP, SNMP V3, DNP 3.0<br>V2, SMTP, NTP Synchronization, HTTP/HTTPs<br>post, FTP post, sFTP server, HTTPs webserv-<br>er, Google IoT, MQTT |

#### Features

- + Duplex Fiber Optics LC connector, Ethernet port, and Wi-Fi works simultaneously with different networks & DAQ systems.
- + Secure TLS 1.2/SSL compliant encrypted webserver for industry-leading cybersecurity standard
- Multimode 62.5/125 μm and 50/125 μm for data centers, battery storage and utility
- + COMTRADE file format for waveform capture and event data of electrical power systems
- + 8 GB onboard memory with 1-second interval datalogging capabilities. Metering data backup log to avoid data loss during network downtime

#### Industry leading Fast Read mode at 100ms and 20ms response rate via Modbus-TCP/IP protocol for real-time data update

- + 802.3u Fast Ethernet 100Base-FX compatible up to 2km
- + EtherNet/IP and IEC 61850 protocol support for industrial automation, utility and substation
- + Remote access to WEB2 dashboard interface for realtime meter data, trend analysis, harmonics, waveform in graph and tabular format
- + Wi-Fi supports Access Point and Station mode for both direct connection/configuration & public Wi-Fi network connection



### **Ordering Information**

|                   | Module Type - | Protocol  |                                     |
|-------------------|---------------|-----------|-------------------------------------|
| Ordering Example: | AXM-WEB2 FOLC |           |                                     |
|                   | AXM           | WEB2 FOLC | Ethernet, Fiber<br>Optics LC, Wi-Fi |



## AXM-WEB2-D

Dual Ethernet Communication Module Datasheet





AXM-WEB2-D includes dual Ethernet ports for the Acuvim II and Acuvim-L Series power meters. Multi-protocols are supported such as IEC61850 2nd Ed., Modbus, BACnet, MQTT, Google IoT, and DNP3 V2.



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### Communication

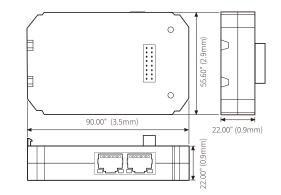
| Meter Series | Acuvim II, Acuvim-L  |
|--------------|--|
| Ethernet     | LAN Dual RJ45 10/100M Ethernet   |
| Protocols    | IEC 61850 2nd Ed., EtherNet/IP, Mod-<br>bus-TCP/IP, BACnet-IP, SNMP V3, DNP 3.0<br>V2, RSTP, SMTP, NTP Synchronization, HTTP/<br>HTTPs post, FTP post, sFTP server, HTTPs<br>webserver, Google IoT, MQTT |

#### Features

- + Dual Ethernet ports works simultaneously with different networks & DAQ systems. RJ45 supports individual network configuration
- + COMTRADE file format for waveform capture and event data of electrical power systems
- + 8 GB onboard memory with 1-second interval datalogging capabilities. Metering data backup log to avoid data loss during network downtime
- Industry leading Fast Read mode at 100ms and 20ms response rate via Modbus-TCP/IP protocol for real-time data updates

- + Secure TLS1.2/SSL compliant encrypted webserver for industry-leading cybersecurity standard
- + EtherNet/IP and IEC 61850 protocol support for industrial automation, utility, and substation
- + Remote access to WEB2 dashboard interface for realtime meter data, trend analysis, harmonics, waveform in graph and tabular format

#### Dimensions



#### **Ordering Information**

|                   | Module Type | - | Protocol |                       |
|-------------------|-------------|---|----------|-----------------------|
| Ordering Example: | AXM-WEB2-D  |   |          |                       |
|                   | AXM         |   | WEB2-D   | Two Ethernet<br>ports |



# WEB2 Interface

|                      | <u></u>                          |          |  |                              |      |                                      |                    |                   | 🕑 Log     | out | 9:47 AM -0500 22 Jan, 2024 | () About | Settings | AXM-WEB2 | ACCUENE  | чбY |
|----------------------|----------------------------------|----------|--|------------------------------|------|--------------------------------------|--------------------|-------------------|-----------|-----|----------------------------|----------|----------|----------|----------|-----|
| Dashboard            | III Metering +                   | O Logs • |  |                              |      |                                      |                    |                   |           |     |                            |          |          |          |          |     |
| Dashboard            | Basic Metering<br>Power & Energy |          |  |                              |      |                                      |                    |                   |           |     |                            |          |          |          |          |     |
| Basic Metering       | Min/Max<br>THD                   |          |  |                              |      |                                      | Po                 | wer & Energy      |           |     |                            |          |          |          |          |     |
| Average Votage       | Harmonics<br>Phase Angles        |          |  | 120.021 V Total Power Factor |      |                                      |                    |                   |           |     |                            | 1.000 PF |          |          |          |     |
| Average Line Voltage |                                  |          |  |                              |      | 207.883 V                            | Total Active Power |                   |           |     |                            |          |          |          | 1.801 KV |     |
| Average Current      | IVO<br>Dual Source Energy        |          |  |                              |      | 5.001 A                              | Tota               | Apparent Power    |           |     |                            |          |          |          | 1.801 kV | 4   |
| Frequency            | busicourse energy                |          |  |                              |      | 60.001 Hz                            | Imp                | ort Active Energy |           |     |                            |          |          |          | 56.2 kV  | 95  |
| Full Report          |                                  |          |  |                              |      |                                      | Ful                | Report            |           |     |                            |          |          |          |          |     |
| THD                  |                                  |          |  |                              |      |                                      | Ma                 | x Demand          |           |     |                            |          |          |          |          |     |
| THO Votage Average   |                                  |          |  |                              |      | 0.020 %                              | Mau                | imum Apparent Pow | er Demand |     |                            |          |          |          | 1.801 KV | 5   |
| THD Current Average  |                                  | 0.010 %  |  |                              | Max  | Maximum Active Power Demand 1.801 KW |                    |                   |           |     |                            |          |          |          |          |     |
| Full Report          |                                  |          |  |                              |      |                                      | Ful                | I Report          |           |     |                            |          |          |          |          |     |
|                      |                                  |          |  |                              | Me   | tering                               | g Da               | ashbc             | bard      |     |                            |          |          |          |          |     |
| + Basi               | c Mete                           | ering    |  | +                            | THD  |                                      |                    |                   |           | +   | Sequen                     | ce       |          |          |          |     |
| + Pow                | er & Ei                          | nergy    |  | + Harmonics                  |      | S                                    |                    |                   | +         | I/O |                            |          |          |          |          |     |
| + Min/               | /Max                             |          |  | +                            | Phas | e Ang                                | gles               |                   |           |     |                            |          |          |          |          |     |

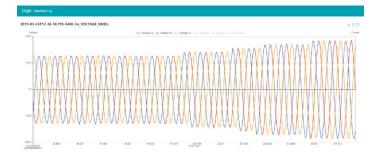
#### **Metering Harmonics**

Display voltage and current harmonics between 2<sup>nd</sup> - 3<sup>st</sup> or 32<sup>nd</sup> - 63<sup>rd</sup> ingraphical and tabular format. Parameters are updated every 15 seconds.



#### Waveform Log

Available for Acuvim IIW, it supports waveform capture when a power quality event occurs 10 cycles before and after the triggering point for voltage sag, swells, or overcurrent.



#### Trend Log

The real-time trend and energy trend graph shows a number of different parameters with option to configure different time frames and time intervals.



#### Phase Angle

Visual diagram of the phase angles of voltage and current waveform and can be used for remote troubleshooting. Parameters are updated every 10 seconds.



#### **COMMUNICATION MODULES**

|                         |          |                  |             | <ul> <li>Function;</li> <li>Option;</li> <li>Blank NA</li> </ul> |
|-------------------------|----------|------------------|-------------|--|
|                         | Standard | AXM<br>WEB2 FOLC | AXM<br>WEB2 | AXM-WEB2-D   |
|                         |          |                  |             |  |
| Modbus-RTU              | •        |                  |             |  |
| BACnet-MS/TP            | •        |                  |             |  |
| DNP 3.0 Over IP         |          | •                | •           | •  |
| IEC 61850               |          | •                | •           | •  |
| Modbus-TCP/IP           |          | •                | •           | •  |
| HTTP/HTTPs<br>Webserver |          | ٠                | •           | •  |
| SMTP Email              |          | •                | •           | •  |
| SNMP V3                 |          | •                | •           | •  |
| EtherNet/IP             |          | •                | •           | •  |
| MQTT                    |          | •                | •           | •  |
| RSTP                    |          | •                | •           | •  |
| IPv6                    |          | •                | •           | •  |
| HTTP/HTTPs Push         |          | •                | •           | •  |
| FTP Post                |          | •                | •           | •  |
| sFTP Server             |          | •                | •           | •  |
| Datalogging             | 16MB     | 8GB              | 8GB         | 8GB  |
| BACnet-IP               |          | •                | •           | •  |
| PROFIBUS                |          |                  |             |  |
| Wi-Fi                   |          | •                | •           |  |
| RJ45 Ports              |          | 1                | 2           | 2  |
| Fiber Optics LC         |          | •                |             |  |