Acuvim II

Advanced Power & Energy Meter Datasheet









EN55011

DESCRIPTION

The Acuvim II Series advanced power and energy meter is a robust solution for power monitoring, kWh metering, power quality analysis, and more. This multifunction meter is engineered for easy integration into any project environment and is compatible with a wide array of plug-in expansion modules to facilitate communication on over 15 different industry-standard protocols. Its two available form factors include a panel mount meter with a digital display and a DIN rail transducer configuration. With IEC 61000-4-30 Class S compliant power quality analysis, Acuvim IIW can monitor key PQ events such as harmonics, voltage swells and more.

FEATURES

- NEW Revenue Grade: ANSI C12.20 class 0.1 & IEC 62053-22 class 0.1s.
- NEW 4th CT input to measure neutral current.
- NEW Dual Ethernet ports with both RSTP bridge daisy-chain mode and separately configurable network.
- NEW High-resolution frequency measurement utilizes a custom moving average filter with 0.001Hz and 10mHz accuracy. Window size ranges from 1 - 50 cycles, and update rate varies from 1 - 2 cycles.
- \+ Data logging available with 8MB onboard memory and expandable to 8GB with WEB2 module.
- NEW IEC 61000-4-30 Class S compliant power quality event measurements for Acuvim IIW.
- NEW High-speed update rate. Fast Read mode offers a 20ms Modbus refresh rate, Fast Log is available at 100ms and 50ms intervals via Modbus RTU and TCP.
- \+ Compatible with multiple CT output options including 5A mA, Accuenergy Rogowski coil, or 333mV.
- \+ Modbus-RTU & BACnet MS/TP ready. Optional modules add support for multiple industrial protocols & interfaces such as Modbus-TCP, BACnet-IP, IEC 61850 2nd Ed., Wi-Fi, & EtherNet/IP.

Mod-Tronic | www.mod-tronic.com | sales@mod-tronic.com | 1-800-794-5883

KEY FEATURES

Communication

+ Modbus RTU protocol and BACnet MS/TP via RS485
+ Wi-Fi and Ethernet Communication Channels (Modbus-TCP, BACnet IP, HTTP, SMTP, SNTP, HTTPs, Post, FTP, PROFINET)
+ Dual RJ45 ports with RSTP daisy-chain and two individually configurable Ethernet ports

Data Logging

+ Acuvim II meters offer three assignable historical logs and a real-time clock to record many metering parameters with accurate timestamping. Add the AXM WEB2 module to expand the memory to 8GB with an adjustable log size.
+ WEB2 module offers additional granularity to data logging such as 1 second interval timing and max/min/average and instantaneous reading for real time parameters.

Fast Response

+ 512 samples per cycle for measurement, 100ms and 20ms Modbus refresh rate, and 100ms and 50ms options Fast Logging for real time parameters including Frequency and Active Power.

Flexible Current Transformer Options

+ The Acuvim II is directly compatible with Rogowski coils plus a variety of other current transformer outputs, including 5A, 1A, 80mA, 100mA, 200mA, and 333mV. All CTs are available from Accuenergy.

Power Quality Measurements

+ Acuvim IIW offers IEC 61000-4-30 Class S compliant power quality event measurements. It is designed for monitoring and diagnosing power quality issues to improve efficiency and reliability, and enhance overall system performance. Perfect for energy management systems, building automation systems, and more.

Time of Use

+ Users can assign up to four tariffs (sharp, peak, valley, & normal) to different time periods within a day. The Acuvim II meter will calculate and accumulate energy to different tariffs according to the meter's internal clock and TOU settings.

Optional I/O Module

+ Expand Acuvim II functionality with input/output modules. Connect up to three modules per meter. I/O modules can include residual current monitoring (RCM), resistance temperature detector input, digital input, digital output, pulse output, relay output, analog input, and analog output I/O options.

Alarms

+ Limits can be set for up to 16 indicated parameters with a specified time interval. Parameters that are over or under the setting limit and persist longer than the specified time interval will be recorded and trigger the Alarm DO. Choose from 80 available parameters.



APPLICATIONS

+ Submetering
+ Energy Storage, Microgrids, and VPPs
+ Power Generation
+ Load Banks
+ Building Automation
+ PDUs and Data Centers
+ Energy Management Systems
+ Substation and Distribution Systems
+ Transformer Monitoring
+ Measurement & Verification

SPECIFICATIONS

Metering

PARAMETERS		ACCURACY	RESOLUTION	RANGE
Voltage		0.1%	0.1V	10V~1000kV
Current		0.1%	0.1mA	5mA~50000A
Power		0.1%	1W	-9999MW~9999MW
Reactive Power		0.1%	1var	-9999Mvar~9999Mvar
Apparent Power		0.1%	1VA	0~9999MVA
Power Demand		0.1%	1W	-9999MW~9999MW
Reactive Power Demand		0.1%	1var	-9999Mvar~9999Mvar
Apparent Power Demand		0.1%	1VA	0~9999MVA
Power Factor		0.1%	0.001	-1.000~1.000
Frequency		0.001%	0.001Hz	45.00~65.00Hz; 400Hz*
Energy	Primary 0.1	0.1%	0.1kWh	0-99999999.9kWh
	Primary 0.001	0.1%	0.001kWh	0-999999.999kWh
	Secondary	0.1%	0.001kWh	0-999999.999kWh
Reactive Energy	Primary 0.1	0.1%	0.1kvarh	0-99999999.9kvarh
	Primary 0.001	0.1%	0.001kvarh	0-999999.999kvarh
	Secondary	0.1%	0.001kvarh	0-999999.999kvarh
Apparent Energy	Primary 0.1	0.1%	0.1kVAh	0-99999999.9kVAh
	Primary 0.001	0.1%	0.001kVAh	0-999999.999kVAh
	Secondary	0.1%	0.001kVAh	0-999999.999kVAh
Harmonics		1.0%	0.10%	
Phase Angle		2.0%	0.1°	0.0°~359.9°
Unbalance Factor		2.0%	0.10%	0.0%~100.0%
Running Time			0.01h	0~9999999.99h

Input

CURRENT INPUTS *(EACH CHANNEL)*

Nominal Current Options	① 5A, ② 1A, ③ 333mV, ④ Rogowski Coil, ⑤ 80mA/100mA/200mA
Metering Range	① 0-10A, ② 0-2A, ③ 0-400mV, ④ 0-400mV, ⑤ 0-240mA
Pickup Current	① 5mA, ② 1mA, ③ 0.25mV, ④ 0.25mV, ⑤0.15mA
Withstand	20Arms Continuous, 0.1% of Nominal 100Arms for 1 Second, Non-Recurring
Burden	0.05VA (Typical) @ 5A RMS
Accuracy	0.1% at Reading

VOLTAGE INPUTS *(EACH CHANNEL)*

Nominal Full Scale	480Vac L-N, 828Vac L-L
Withstand	1500Vac Continuous 2500Vac, 50/60Hz for 1 Minute
Input Impedance	2MΩ per Phase
Metering Frequency	45Hz~65Hz; 400Hz*
Pickup Voltage	10Vac
Accuracy	0.1% at Reading

ENERGY ACCURACY

Active	Class 0.1s (According to IEC 62053-22) Class 0.1 (According to ANSI C12.20)
Reactive	Class 0.5s (According to IEC 62053-24)

HARMONIC RESOLUTION

Metered Value	63rd Harmonic

Communication

Modbus-RTU or BACnet MS/TP	Modbus-RTU 2-Wire Shielded Twisted Pair Cable Connection 2400~115200 bps
SECOND RS-485 PORT *(OPTIONAL MODULE)*	Same as the Primary RS485 port Baud Rate: 4800~38400 bps
ETHERNET *(OPTIONAL MODULE)*	Ethernet 10M/100M BaseT MODBUS-TCP DNP 3.0 V2 Over IP Level 2 IEC 61850 2nd Ed. SNMP V3 BACnet-IP HTTP/HTTPs Webserver HTTP/HTTPs, FTP data post SMTP MQTT MV90 NTP PROFINET

**Note: 400Hz operation requires a dedicated 400Hz model. Specifications and available functions may differ from standard model. Contact Accuenergy for details.*

SPECIFICATIONS

I/O Options

DIGITAL INPUT

Input Type	Dry
Input Resistance	100kΩ
Input Voltage Range	20~160 Vac/dc
Input Current (Max)	2mA
Start Voltage	15V
Stop Voltage	5V
Pulse Frequency (Max)	100Hz, 50% Duty Ratio (5ms ON and 5ms OFF)
SOE Resolution	2ms

DIGITAL OUTPUT *(DO) (PHOTO-MOS)*

Voltage Range	0~250Vac/dc
Load Current	100mA (Max)
Output Frequency	25Hz, 50% Duty Ratio (20ms ON, 20ms OFF)
Isolation Voltage	2500Vac

RELAY OUTPUT *(RO) (NO, Form A)*

Switching Voltage (Max)	250Vac, 30Vdc
Load Current	5A (R), 2A (L)
Set Time	10ms (Max)
Contact Resistance	30mΩ (Max)
Isolation Voltage	2500Vac
Mechanical Life	$1.5x10^7$

ANALOG OUTPUT *(AO)*

Output Range	0~5V, 0~20mA 1~5V, 4~20mA Optional
Accuracy	0.50%
Temperature Drift	50ppm/°C Typical
Isolation Voltage	500Vdc
Open Circuit Voltage	15V

ANALOG INPUT *(AI)*

Input Range	0~5V, 0~20mA 1~5V, 4~20mA Optional
Accuracy	0.20%
Temperature Drift	50ppm/°C Typical
Isolation Voltage	500Vdc

POWER SUPPLY FOR DI *(24 VDC)*

Output Voltage	24Vdc
Output Current	42mA
Load (Max)	21 DIs

I/O Options

RESIDUAL CURRENT INPUT

Input Type	Passive AC/Active DC
Pickup Current	0.05 mA
Measurement Range	AC: 0–30 mA (RMS, Secondary) DC: 0–20 mA (Secondary) / 4-20 mA (Secondary)
Resolution	1 μA
Accuracy	Class 1 (IEC 61557-12, I ≥ 0.5 mA)
Crest Factor	≤ 2.5 (at 30 mA AC)
Sampling Rate	8 kHz
Overload Capability	1 A for 1 second (Non-Repetitive), 200 mA Continuous
Fault Detection	Open Circuit / Short Circuit / Overflow

RTD TEMPERATURE INPUT

Channels	2 Inputs
Supported Sensors	PT100, PT1000, KTY83, KTY84
Wiring	2-Wire
Accuracy	±1.5% of Full Scale
Maximum Loop Resistance	≤ 3.3 kΩ (Sensor + Cable)
Fault Detection	Open / Short / High Alarm / Low Alarm

Control Power

Universal	AC or DC

AC/DC CONTROL POWER

Operating Range	100~415Vac, 50/60Hz; 100~300Vdc
Burden	5W
Frequency	50/60Hz
Withstand	3250Vac, 50/60Hz for 1 Minute
	Installation Category III (Distribution)

LOW VOLTAGE DC CONTROL POWER *(P2V3 Option Only)*

Operating Range	20~60Vdc
Burden	5W

Operating Environment

Operating Temperature	-25°C to 70°C -13°F to 158°F
Storage Temperature	-40°C to 85°C -40°F to 176°F
Relative Humidity	5% to 95% Non-Condensing

Standard Compliance & Certifications

Measurement Standard	IEC 62053-22; ANSI C12.20; IEC61557-12
Environmental Standard	IEC 60068-2, CE, RoHS
Safety Standard	IEC 61010-1, UL 61010-1
EMC Standard	IEC 61000-4/-2-3-4-5-6-8-11, CISPR 22, IEC 61000-3-2, IEC 61000-6-2/4, EN55011
Outlines Standard	DIN 43700, ANSI C39.1
Protocol Conformance	IEC 61850 2nd Ed. BTL Listed for B-SA

FUNCTION LIST

● Function; ⊙ Option; Blank NA

REAL TIME MEASURING	Parameters	Acuvim IIR	Acuvim IIW
Phase Voltage	V1, V2, V3, Vlnavg	●	●
Line Voltage	V12, V23, V31, Vllavg	●	●
Current	I1, I2, I3, In, Iavg	●	●
Power	P1, P2, P3, Psum	●	●
Reactive Power	Q1, Q2, Q3, Qsum	●	●
Apparent Power	S1, S2, S3, Ssum	●	●
Power Factor	PF1, PF2, PF3, PF	●	●
Frequency	F	●	●
Load Features	L/C/R	●	●
Four Quadrant Powers	Four Quadrant Powers	●	●
4-30 CLASS S READINGS			
10/12 Cycle 150/180 Cycle 10 Minutes 2 Hours	F,V1,V2,V3,Vlnavg, V12,V23,V31,Vllavg, I1,I2,I3,In,Iavg, THD_V, THD_I, Unbalance Factor Sequence Readings Current Harmonic Amplitude Voltage Harmonic Amplitude		●
INDEPENDENT CHANNEL			
System Phase Voltage	V1, V2, V3, Vlnavg	●	●
System Line Voltage	V12, V23, V31, Vllavg	●	●
System Frequency	F	●	●
Current	Ichannel1, Ichannel2, Ichannel3, Ichannel4, Isum_1avg, Isum_2avg	●	●
Power	Pchannel1, Pchannel2, Pchannel3, Pchannel4, Psum_1, Psum_2	●	●
Reactive Power	Qchannel1, Qchannel2, Qchannel3, Qchannel4, Qsum_1, Qsum_2	●	●
Apparent Power	Schannel1, Schannel2, Schannel3, Schannel4, Ssum_1, Ssum_2	●	●
Power Factor	PFchannel1, PFchannel2, PFchannel3, PFchannel4, PFsum_1, PFsum_2	●	●
Load Features	Load Features	●	●
Four Quadrant Powers	Four Quadrant Powers	●	●
Energy	Epchannel1_imp, Epchannel2_imp, Epchannel3_imp, Epchannel4_imp Epchannel1_exp, Epchannel2_exp, Epchannel3_exp, Epchannel4_exp Epsum1_imp, Epsum2_imp, Epsum1_exp, Epsum2_exp Epsum1_Totoal, Epsum2_Total, Epsum1_Net, Epsum2_Net	●	●
Reactive Energy	Eqchannel1_imp, Eqchannel2_imp, Eqchannel3_imp, Eqchannel4_imp, Eqchannel1_exp, Eqchannel2_exp, Eqchannel3_exp, Eqchannel4_exp, Eqsum1_imp, Eqsum2_imp, Eqsum1_exp, Eqsum2_exp, Eqsum1_Total, Eqsum2_Total, Eqsum1_Net, Eqsum2_Net	●	●
Apparent Energy	Eschannel1, Eschannel2, Eschannel3, Eschannel4, Essum1, Essum2	●	●
Demand	Dmd_Pchannel1, Dmd_Pchannel2, Dmd_Pchannel3, Dmd_Pchannel4, Dmd_Qchannel1, Dmd_Qchannel2, Dmd_Qchannel3, Dmd_Qchannel4, Dmd_Schannel1, Dmd_Schannel2, Dmd_Schannel3, Dmd_Schannel4, Dmd_Psum1, Dmd_Psum2, Dmd_Qsum1, Dmd_Qsum2 Dmd_Ssum1, Dmd_Ssum2, Dmd_Ichannel1, Dmd_Ichannel2, Dmd_Ichannel3, Dmd_ Ichannel4	●	●
ENERGY			
Active Energy	Ep_imp, Ep_exp, Ep_total, Ep_net , Epa_imp, Epa_exp, Epb_imp, Epb_exp, Epc_imp, Epc_exp, Ep_q1, Ep_q2, Ep_q3, Ep_q4	●	●
Reactive Energy	Eq_imp, Eq_exp, Eq_total, Eq_net, Eqa_imp, Eqa_exp, Eqb_imp, Eqb_exp, Eqc_imp, Eqc_exp	●	●
Apparent Energy	Es_imp, Es_exp, Es_total, Es_net, Esa, Esb, Esc, Es_q1, Es_q2, Es_q3, Es_q4	●	●
DUAL SOURCE ENERGY			
Energy to Generator	Energy1_Generator, Energy2_Generator, Energy3_Generator	●	●
Energy to Grid	Energy1_Grid, Energy2_ Grid, Energy3_Grid	●	●

FUNCTION LIST

● Function; ⊙ Option; Blank NA

DEMAND			
Current Demand	Dmd_I1, Dmd_I2, Dmd_I3, Dmd_ In	●	●
Power Demand	Dmd_Psum, Dmd_Qsum, Dmd_ Ssum	●	●
TIME			
Real-Time Clock	Year, Month, Day, Hour, Minute, Second	●	●
HOUR			
Meter Running Time	Hour	●	●
Load Running Time	Hour	●	●
POWER QUALITY			
Voltage Unbalance	U_unbl	●	●
Current Unbalance	I_unbl	●	●
Voltage THD	THD_V1,THD_V2,THD_V3, THD_Vavg	●	●
Current THD	THD_I1, THD_I2, THD_I3, THD_Iavg	●	●
Individual Harmonics	Harmonics 2nd to 63rd (50Hz or 60Hz) *	●	●
Voltage Crest Factor	Crest Factor	●	●
TIF	THFF	●	●
Current K Factor	K Factor	●	●
SEQUENCE			
Voltage/Current Sequence	Positive Sequence, Negative Sequence, Zero Sequence	●	●
Phase Order	ABC, ACB	●	●
PHASE ANGLES			
Voltage/Current Phase Angles	Voltage Phase Angle, Current Phase Angle	●	●
STATISTICS			
MAX with Time Stamp MIN with Time Stamp	Each Phase of V & I, Total of P, Q, S, PF & F, Demand of I1, I2, I3, IN, P, Q, & S, Each Phase THD of V & I, Unbalance Factor of V & I	●	●
ALARM			
Over/Under Limit Alarm	V, I, P, Q, S, PF, V_THD & I_THD Each Phase and Total/Average, Unbalance Factor of V& I, Load Type, Analog and Digital Input of Each Channel, Demand of I1, I2, I3, P, Q & S, Reverse Phase Sequence	●	●
WAVEFORM CAPTURE			
Voltage and Current Waveform	Trigger, Manual, DI change, Voltage Sag Voltage Swell Current Swell		●
4-30 CLASS S WAVEFORM CAPTURE			
Class S Voltage and Current Waveform	Trigger, Manual, DI Change, Voltage Sag Voltage Swell Voltage Interrupt Current Swell		●
POWER QUALITY EVENT LOGGING			
Power Quality Event with Time Stamp	Voltage SAG and Fail, Current overflow, Phase Sequence Error		●

FUNCTION LIST

● Function; ⊙ Option; Blank NA

4-30 CLASS S PQ EVENT			
Class S Power Quality Event with Timestamp and Duration	Voltage Sag Voltage Swell Voltage Interrupt Unbalance Voltage Current Swell Unbalance Current Event Duration		●
DATA LOGGING			
Data Logging 1 Data Logging 2 Data Logging 3 Data Logging 4	Frequency V1, V2, V3, VInavg V12, V23, V31, VIIavg I1, I2, I3, In, Iavg P1, P2, P3, Psum Q1, Q2, Q3, Qsum S1, S2, S3, Ssum Ep_imp, Ep_exp, Ep_total, Ep_net, Eq_imp, Eq_exp, Eq_total, Eq_net, Es_imp, Es_exp, Es_total, Es_net Epa_imp, Epa_exp, Epb_imp, Epb_exp, Epc_imp, Epc_exp Eqa_imp, Eqa_exp, Eqb_imp, Eqb_exp, Eqc_imp, Eqc_exp Esa_imp, Esa_exp, Esb_imp, Esb_exp, Esc_imp, Esc_exp PF1, PF2, PF3, PF U_unbl, I_unbl Load Type THD_V1, THD_V2, THD_V3, THD_Vavg THD_I1, THD_I2, THD_I3, THD_Iavg Harmonics 2nd to 63rd, Crest Factor, THFF, K Factor Sequence, phase angles DI counter, AI, AO Dmd P, Dmd Q, Dmd S, Dmd_I1, Dmd_I2, Dmd_I3	●	●
TIME OF USE			
Energy/Max Demand	TOU, 4 Tariffs, 12 Seasons, 14 Schedules	●	●
Daylight Saving Time	Two Adjustable Formats	●	●
I/O MODULE			
Switch Status (DI)	Digital Input	⊙	⊙
Power Supply for DI	24V DC	⊙	⊙
Relay Output (RO)	NO, Form A	⊙	⊙
Digital Output (DO)	Photo-MOS	⊙	⊙
Pulse Output (PO)	By Using DO	⊙	⊙
Analog Input (AI)	0 (4) – 20mA, 0 (1) – 5V	⊙	⊙
Analog Output (AO)	0 (4) – 20mA, 0 (1) – 5V	⊙	⊙
Residual Current Monitoring Input (RCM)	AC: 0–30 mA (RMS, Secondary) DC: 0–20 mA (Secondary) / 4-20 mA (Secondary)	⊙	⊙
Temperature Measurement Input (RTD)	PT100, PT1000, KTY83, KTY84	⊙	⊙
COMMUNICATION			
RS485 Port, Half Duplex, Optical Isolated	Modbus-RTU/BACnet Protocol	●	●
Ethernet Module	Modbus-TCP, HTTP, SMTP, SNTP, Modbus Gateway Passthrough	⊙	⊙
RS-485 Module	Modbus-RTU Protocol	⊙	⊙
ONBOARD MEMORY SIZE			
Memory	Bytes	8MB	16MB (8MB Data Logging + 8MB Power Quality)
DISPLAY			
LCD or DIN Rail		⊙	⊙
DIMENSIONS			
96×96×64.3mm (Opening Size: 92 × 92mm)			

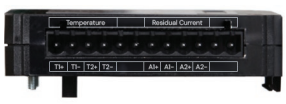
**Note: 400Hz operation requires a dedicated 400Hz model. Specifications and available functions may differ from standard model.* Contact Mod-Tronic for details.

COMMUNICATION MODULES

● Function; ⊙ Option; Blank NA

	Standard	AXM WEB2 FOLC	AXM WEB2	AXM WEB2-D	AXM-NET2	AXM RS485
						
Modbus-RTU	●					●
BACnet-MS/TP	●					
DNP 3.0 V2 Over IP		●	●	●		
IEC 61850 2nd Ed.		●	●	●		
Modbus-TCP		●	●	●	●	
HTTP/HTTPS Webserver		●	●	●	●	
SMTP Email		●	●	●		
SNMP V3		●	●	●		
Time Synchronization		NTP	NTP	NTP	SNTP	
EtherNet/IP		●	●	●		
MQTT		●	●	●		
RSTP		●	●	●	●	
IPv6		●	●	●		
HTTP/HTTPs Push		●	●	●		
AcuCloud		●	●	●	●	
FTP Post		●	●	●		
sFTP Server		●	●	●		
Datalogging	8MB	8GB	8GB	8GB		
BACnet-IP		●	●	●		
PROFINET		●	●	●		
Wi-Fi		●	●			
RJ45 Ports		1	2	2	2	
Fiber Optics LC		●				

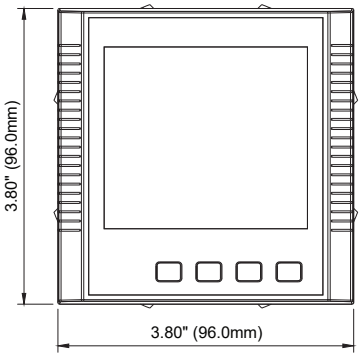
IO MODULES

	AXM-IO1	AXM-IO2	AXM-IO3	AXM-IO4
				
Digital Input *(Dry)*	6	4	4	
Digital Output		2		
Relay Output	2		2	
Analogue Inputs			2	
Analogue Outputs		2		
RCM Input				2
RTD Input				2
Power Supply	24Vdc			

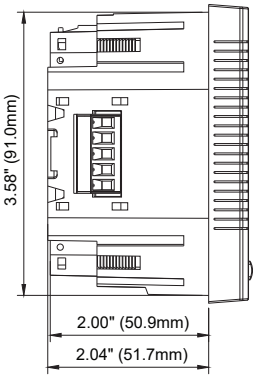
DIMENSIONS

Acuvim II Dimensions

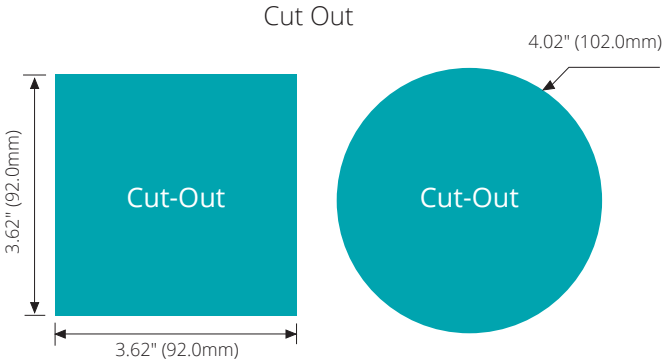
Front View



Side View



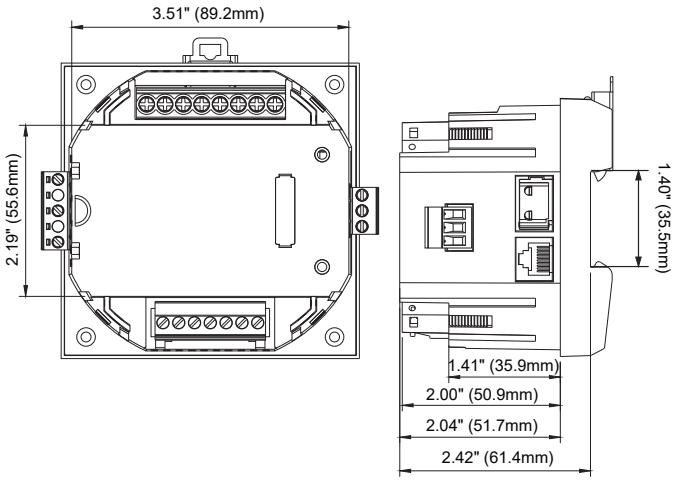
Cut Out



DIN Mount Meter Dimensions

Rear View

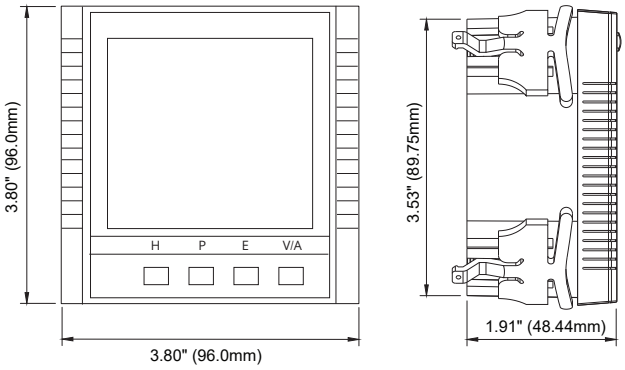
Side View



External Display Module Dimensions

Front View

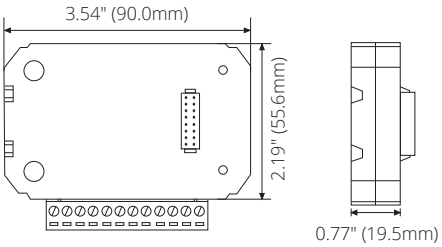
Side View



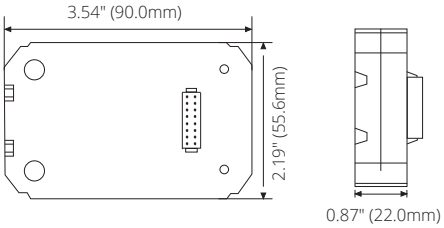
Note: 1. *Display module is connected with a six-foot 10 pin RJ50 cable. If longer cable is needed, please specify that in the ordering statement.*

2. *Display module opening size and Acuvim II body openings are exactly the same size.*

I/O Module Dimensions



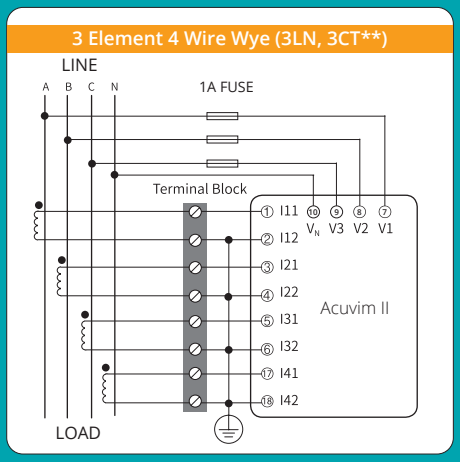
Communication Module Dimensions



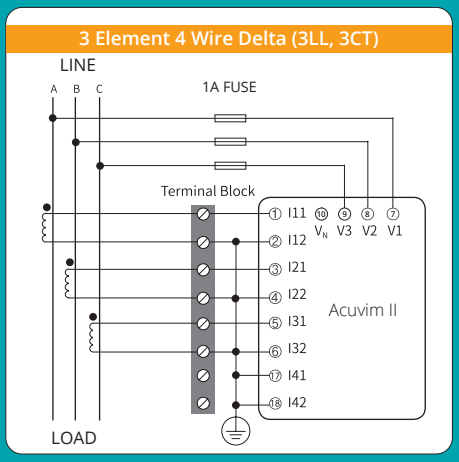
WIRING DIAGRAMS

Typical Wiring With 5A/1A CTs

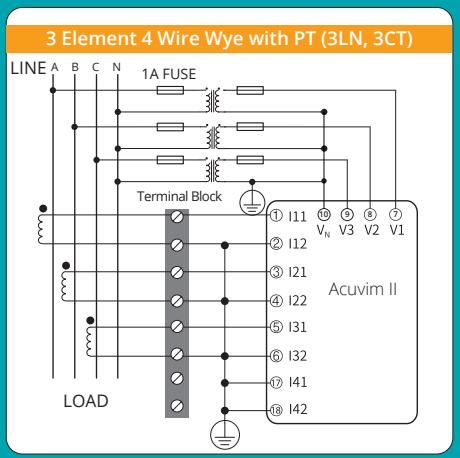
3 Element 4 Wire Wye (3LN, 3CT)**



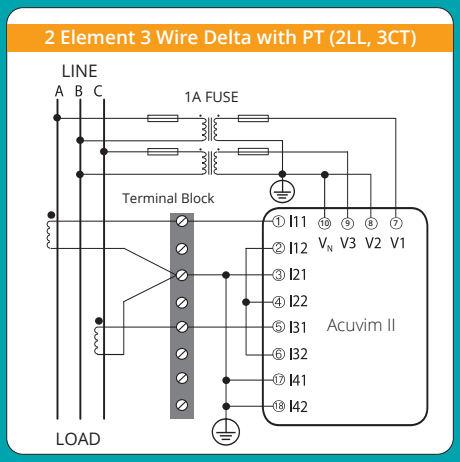
3 Element 4 Wire Delta (3LL, 3CT)



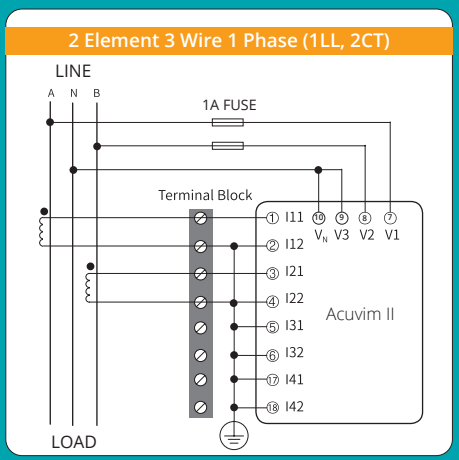
3 Element 4 Wire Wye with PT (3LN, 3CT)



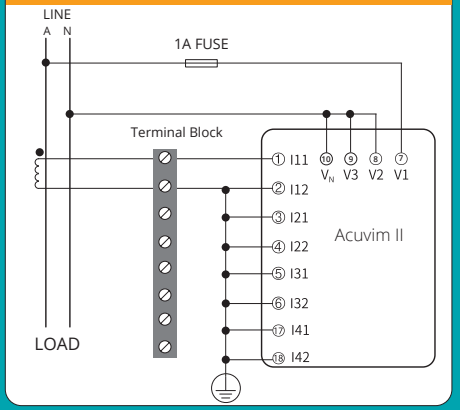
2 Element 3 Wire Delta with PT (2LL, 3CT)



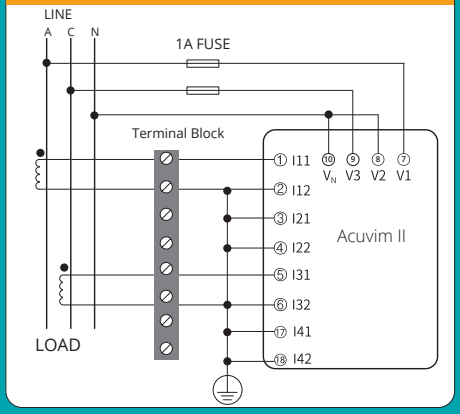
2 Element 3 Wire 1 Phase (1LL, 2CT)



1 Element 2 Wire (1LN, 1CT)



2 Elements 3 Wire Network (2LN, 2CT)

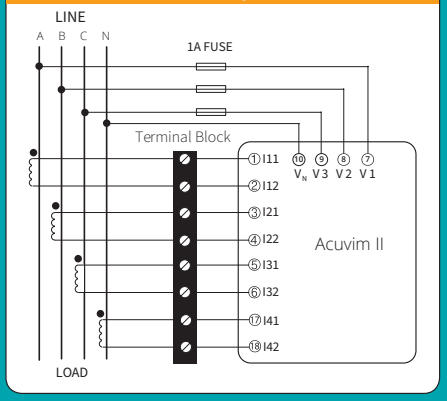


*Note: *2CT configuration is optional only in 3 Phase 3 Wire system.*
***Neutral CT is optional.*

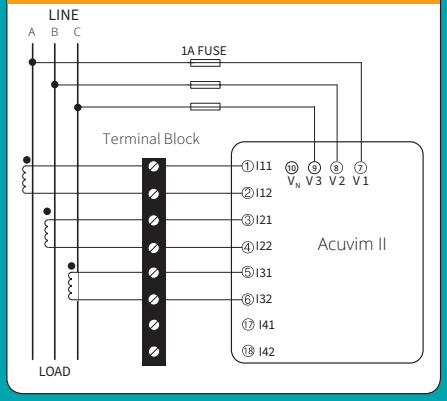
WIRING DIAGRAMS

Typical Wiring RCT/mV/mA Current Input

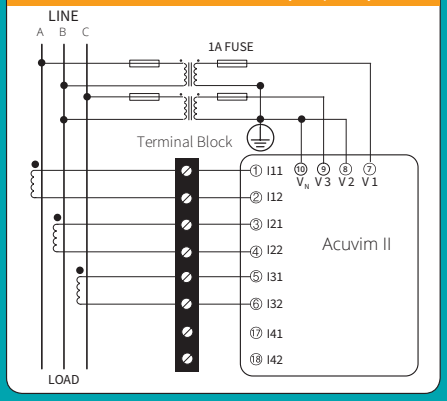
3 Element 4 Wire Wye (3LN, 3CT**)



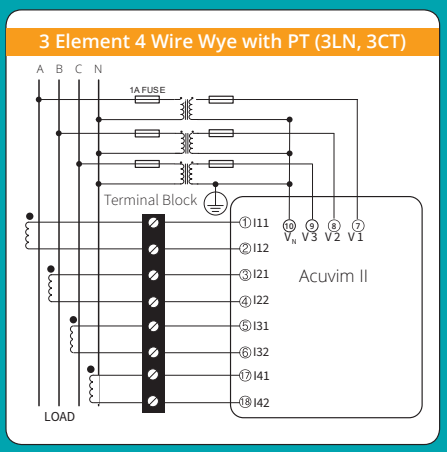
3 Element 4 Wire Delta (3LL, 3CT)



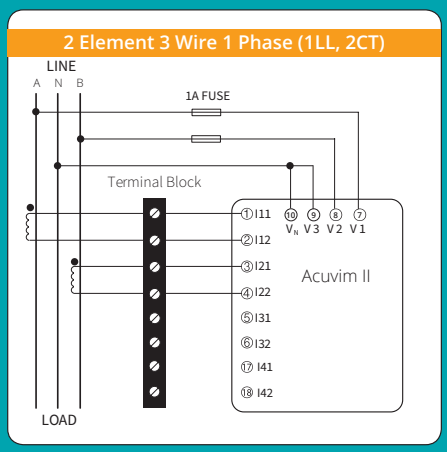
2 Element 3 Wire Delta (2LL, 3CT)



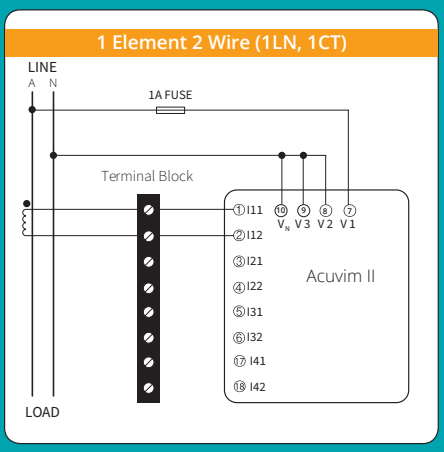
3 Element 4 Wire Wye with PT (3LN, 3CT)



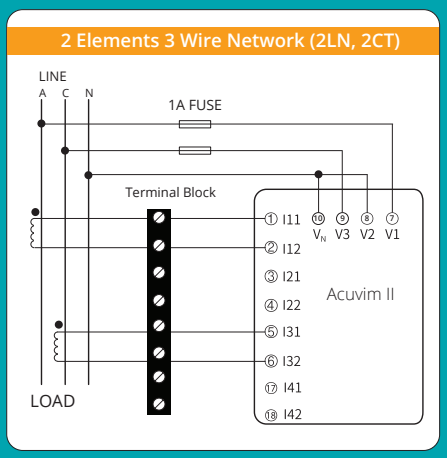
2 Element 3 Wire 1 Phase (1LL, 2CT)



1 Element 2 Wire (1LN, 1CT)



2 Elements 3 Wire Network (2LN, 2CT)

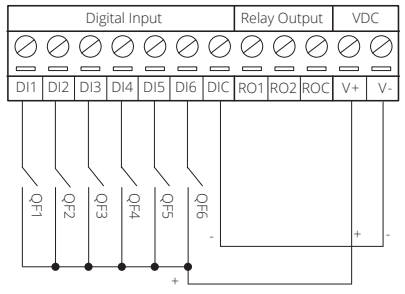


*Note: *2CT configuration is optional only in 3 Phase 3 Wire system.*
***Neutral CT is optional.*

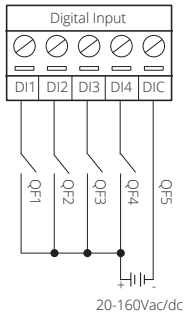
WIRING DIAGRAMS

I/O Module Wiring

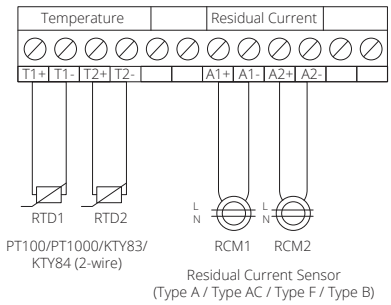
AXM-IO1



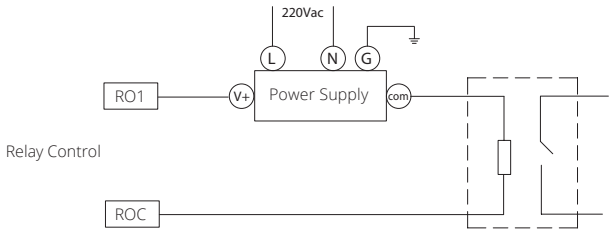
AXM-IO2/IO3



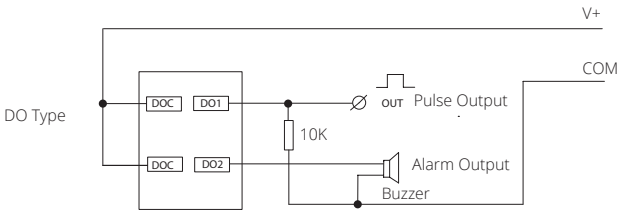
AXM-IO4



Relay Output (RO) Wiring



Energy Output (DO) Wiring



*Note: *2CT configuration is optional only in 3 Phase 3 Wire system.*
***Neutral CT is optional.*

ACCESSORIES

DIN Rail Adapter

The AXM-DIN Rail Adapter is the easy way to mount the Acuvim II Series energy meter on either horizontal or vertical DIN rail. The adapter quickly secures to the meter and is compatible with all AXM communication modules as well as I/O options.



Protective Display Cover

The Protective Display Cover is designed for Acuvim II Series energy meters and other 96mm by 96mm display panel meters. Crucial in harsh environments, it increases the IP environmental rating of the meter's display to IP66 or NEMA 4X.



USB RS485 Converter

This plug-and-play USB to Serial RS485 Converter is designed to provide a convenient, reliable USB connection to the Acuvim II Series power meters and other serial devices.



ORDERING INFORMATION

Meter Model	Mounting Option	Frequency	Current Input	Power Supply
Acuvim IIR: Data logging, TOU	**D**: LCD Display *(Panel Mount Meter/Transducer)*	**Blank**: Standard 50/60Hz	**5A**: 5A/1A *(Input Field Selectable)*	**P1V3**: 100~415Vac, 50/60Hz, 100~300Vdc
Acuvim IIW: IIR + Waveform Capture and PQ Event Logging	**M**: DIN-Rail Mount Transducer without Display *(Optional Remote Display Available)*	**400**: 400Hz *(5 – 460 Hz)*	**mV**: 333mV and Rogowski Coil *(Input Field Selectable)*	**P2V3**: 20~60Vdc
			mA: 80mA/100mA/200mA *(Input Field Selectable)*	

Ordering Example:	
	Acuvim-IIR-M-mV-P2V3
	Acuvim-IIW-D-5A-P1V3
	Acuvim-IIR-D-400-mV-P1V3

Note:
1. Accuenergy suggests using a USB-RS485 converter for configuration, and 3 CTs per three phase circuits.
2. All fields must be completed to create a part number.
3. Add "-S" after power supply for anti-tampering seal option.

Communication Module *(Optional)*	Protocols	
AXM	**WEB2-FOLC:**	IEC 61850 2nd Ed., Modbus-TCP, HTTP/HTTPs Webserver, SMTP Email, SNMP, HTTP/HTTPS Push, FTP Post, sFTP Server, BACnet-IP, Datalogging, Wi-Fi, Fiber Optics LC, Ethernet port, EtherNet/IP, MQTT, Modbus Gateway Passthrough, PROFINET
	WEB2:	IEC 61850 2nd Ed., Modbus-TCP, HTTP/HTTPs Webserver, SMTP Email, SNMP, HTTP/HTTPS Push, FTP Post, sFTP Server, BACnet-IP, Datalogging, Wi-Fi, Dual Ethernet Ports, EtherNet/IP, MQTT, Modbus Gateway Passthrough, PROFINET
	WEB2-D:	IEC 61850 2nd Ed., Modbus-TCP, HTTP/HTTPs Webserver, SMTP Email, SNMP, HTTP/HTTPS Push, FTP Post, sFTP Server, BACnet-IP, Datalogging, Dual Ethernet Ports, EtherNet/IP, MQTT, Modbus Gateway Passthrough, PROFINET
	RS485:	Modbus-RTU
	NET2:	Modbus-TCP, HTTPS Web Interface, SNTP Time Synchronization, AcuCloud HTTPS Data Post

Ordering Example:	
	AXM-RS485
	AXM-WEB2-FOLC

I/O Module *(Optional)*	
AXM-IO1	6 Digital Inputs, 2 Relay Outputs, 24Vdc Power Supply
AXM-IO2	4 Digital Inputs, 2 Digital Outputs, 2 Analog Outputs (0~5V or 1~5V, 0~20mA or 4~20mA)
AXM-IO3	4 Digital Inputs, 2 Relay Outputs, 2 Analog Inputs (0~5V or 1~5V, 0~20mA or 4~20mA)
AXM-IO4	2 Residual Current Inputs (RCM), 2 RTD Temperature Inputs
Ordering Example:	**AXM-IO4**

Accessories *(Optional)*	
REM-DS2:	Remote Display *(Only for Acuvim II DIN-Rail Mount "M" option)*
AXM-DIN:	DIN Rail Adapter
IP66/NEMA4X:	Environmental Protection Cover
USB-RS485:	USB-to-RS485 Converter

Note:
1. Refer to the Communication table and I/O Module table.
2. A maximum of 3 modules may be attached to the meter. If a communication module is used (e.g. AXM-WEB2), it must be installed on the back FIRST before the other I/O modules are attached.
3. No more than 2 of the same I/O modules may be attached to the meter (e.g. two AXM-IO2). The same two I/O modules must have different logic numbers. Logic numbers can be configured as either 1 or 2 through Acuview 2 or AXM-WEB2.
4. If Acuvim IIW uses DI to trigger a waveform capture, the I/O module logic number must be Module 1.

MOD-TRONIC INSTRUMENTS LIMITED

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Specs Subject To Change Without Notice.

ACCUENERGY

ISO 9001, 14001 & 45001 Certified

ISO 27001 & 50001 Certified

BBB ACCREDITED BUSINESS