AcuHMI 4” Display

Remote Meter Monitor
Datasheet









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DESCRIPTION

AcuHMI 4” Display is a panel or DIN rail mounted remote meter monitor that provides data and configuration for compatible Accuenergy meters. Comprising a full colour LCD with tactile button navigation, RS485 and dual Ethernet connectivity, it displays real-time measurements and status of up to 8 connected meters.

Industry standard Modbus TCP connects upstream BMS and SCADA systems to meters for centralized monitoring and tenant billing in power distribution systems.

FEATURES

+ 65,536 colour LCD with navigation buttons for meter monitoring and configuration.
+ Real-time electrical measurements, harmonics, meter status, and phasor diagrams.
+ Monitors up to 8 meters simultaneously, including the AcuRev 1320, Acuvim II, and AcuRev 4100.
+ RSTP support for network redundancy.
+ Configurable network settings with DHCP or static IP addressing.
+ Modbus RTU and Modbus TCP communication via RS485 and dual 10/100 Mbps Ethernet ports.
+ Firmware upgrade through the RS485 or Ethernet.
+ Dual-bank firmware architecture protects against power-failures.
+ 12 – 36 VDC supply with reverse polarity and surge protection.
+ 96 × 96 mm panel mount with an IP54-rated front panel and optional DIN rail mounting.

KEY FEATURES

Real-Time Monitoring

+ Monitor voltage, current, power, power factor, frequency, energy, and demand readings.
+ Review harmonics and phasor diagrams for power distribution facilities.
+ View digital input, digital output, and relay status of the connected meters.
+ Password protected access to toggle relay outputs.
+ 320 × 240 pixels resolution LCD to view measurements and device status for access to configuration.

Industrial Design

+ Built-in reverse polarity protection and ±1 kV surge protection.
+ Requires an independent 12 – 36 VDC power supply for operation and installation.

Secure Configuration

+ Configure meter wiring, CT/PT ratios, demand settings, and communication parameters.
+ Restricted access to meter configurations, HMI settings, and control relay outputs.

Centralized Multi-Meter Monitoring

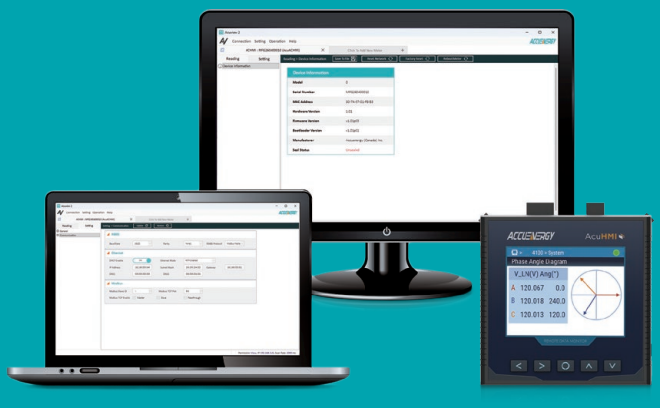
+ Monitor up to eight meters simultaneously from a centralized display in tenant billing applications.
+ Identify online or offline status of connected meters in a device list.
+ Provides automatic wiring-based phase mapping for multiple meters installed in distribution panels.

Multi-Protocol Support

+ Forward upstream Modbus TCP requests to downstream meters over Ethernet or RS485.
+ Handle up to four upstream Modbus TCP connections from BMS, SCADA, or energy management systems.
+ Two 10/100 Mbps Ethernet ports support communication for integration into industrial control systems.

Firmware Management

+ Dual-bank architecture to maintain operation if an update is interrupted.
+ Access to device identification and communication details for easy maintenance.



APPLICATIONS

+ Industrial and Commercial Buildings
+ Distribution Panels
+ Building Management Systems (BMS)
+ Tenant Billing Systems
+ Data Center and PDU Monitoring
+ SCADA and Energy Management Systems

SPECIFICATIONS

Communication Specifications

Serial Port	1 × RS485
Ethernet Port	2 × RJ45 Ethernet Ports (ETH1 and ETH2)
Supported Communication Protocols	Modbus RTU Modbus TCP

Modbus RS485 Specifications

Baud Rate	9600 / 19200 / 38400 / 57600 / 115200 bps
Parity	Odd / Even / None 2 / None 1
Function	Meter Communication Firmware Upgrade

Ethernet Specifications

Speed	10/100 Mbps
Ethernet Modes	RSTP Enable Single Ethernet with No RSTP Dual Ethernet with No RSTP
IP Configuration	DHCP Static IP

Gateway Mode

Upstream	Modbus TCP
Downstream	Modbus TCP or Modbus RTU
Maximum Concurrent TCP Connections	4
Maximum Connected Meters	8

Control Power

Operating Range	12 – 36 VDC
Typical Burden	≤ 3 W
Reverse Polarity Protection	Yes
Surge Protection	±1 kV as per IEC 61000-4-5

Display Specifications

LCD Type	Non-Touch Colour LCD
Screen Size	81.28 mm (3.2") Diagonal
Resolution	320 × 240 Pixels
Colour Depth	16-bit Displays 65,536 Colours
User Input	5 Physical Buttons
Display Pages	Configurable per Connected Meter

Operating Environment

Location	Indoor
Pollution Degree	2
Rated Operating Range	–25 °C to +70 °C (–13 °F to +158 °F), 0 % to 75 % RH
Limit Range of Operation	–30 °C to +80 °C (–22 °F to +176 °F), 0 % to 95 % RH
Storage and Shipping Range	–30 °C to +80 °C (–22 °F to +176 °F), 0 % to 95 % RH
Altitude	0 m to 2000 m

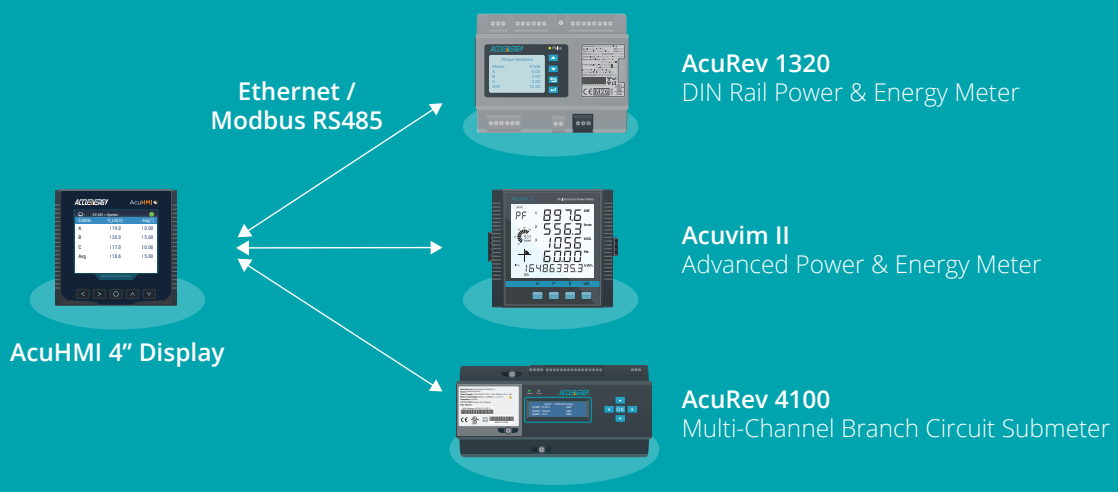
Mechanical Specifications

Front Panel Dimensions	96 mm × 96 mm (3.78" × 3.78")
Panel Cutout	92 mm × 92 mm (3.62" × 3.62")
Mounting Method	Panel Mount Optional 35 mm DIN Rail
Overall Depth	49 mm (1.93")
Ingress Protection Rating	IP54: Front Panel Recommended installation in a cabinet or enclosure rated IP54 or higher.

Standard Compliance and Certifications

Environmental Standard	IEC 60068-2, CE, RoHS
Safety Standard	IEC/UL 61010-1:2010, IEC/UL 61010-2-030:2010
EMC Standard	IEC 61000-6-2, IEC 61326-1, IEC 61000-4/-2-3-4-5-6-8, CISPR 32, FCC Part 15 Class A, EN55032 Class A

COMPATIBLE METERS

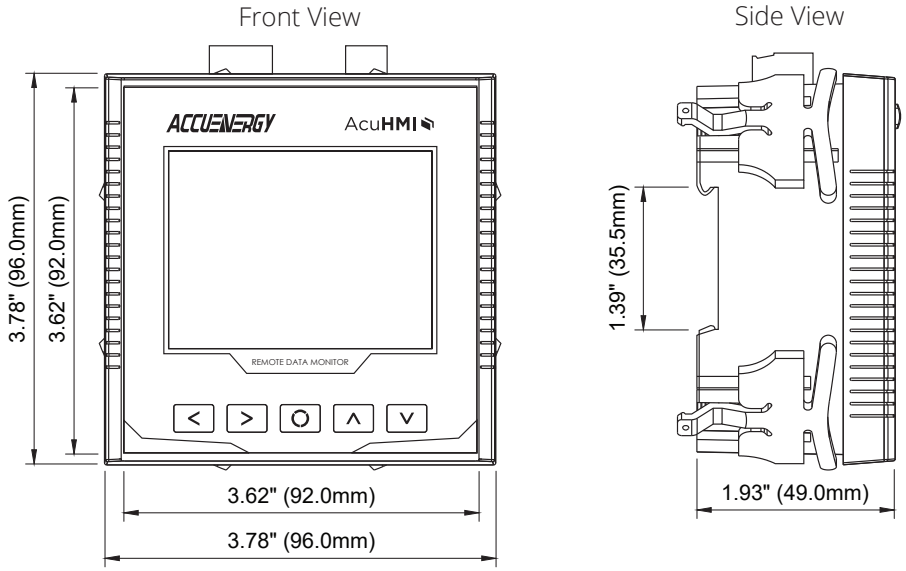


FUNCTION LIST

Function	Parameters / Description
DISPLAY AND NAVIGATION	
Device List	Connected meter list, online/offline status, communication mode, and address.
Readings	Real-time electrical parameters of the selected meter.
I/O Status*	Digital input, digital output, and relay output status on separate subpages. I/O status not available on Acuvim II, and no relay output screen on AcuRev 1320.
Meter Settings	Meter wiring, CT/PT, demand, communication parameters.
Meter Info	Model, serial number, firmware version, hardware version, MAC address and manufacturer.
HMI Settings	Backlight timeout, network settings, RS485 parameters, password change, factory reset, and network reset.
HMI Info	AcuHMI-1-4 model, serial number, firmware version, MAC address, IP address.
REAL-TIME READINGS*	
Voltage and Current	V, I
Power	P, Q, S
Power Factor and Frequency	PF, frequency
Energy	Energy registers of the connected meter.
Demand	Demand values of the connected meter.
Phasor Diagram	Graphical voltage and current phasors.
Power Quality	THD, odd and even harmonics.
METER CONFIGURATION	
Wiring	Wiring configuration of the connected meter.
CT / PT	Current and voltage transformer setup.
Demand	Demand settings.
Communication	Meter communication parameters.
Access Control	4-digit password required for configuration.
COMMUNICATION, GATEWAY AND MAINTENANCE	
Meter Communication	Modbus RTU over RS485; Modbus TCP over Ethernet.
Pass-Through Gateway	Forwards upstream Modbus TCP requests to downstream meters over Ethernet or RS485; up to 4 concurrent TCP connections.
Network Redundancy	RSTP Enable, Single ETH (No RSTP), Dual ETH (No RSTP).
IP Configuration	DHCP / Static IP.
Firmware Upgrade	Update firmware through Modbus RS485 or Ethernet.

*Note: Displayed parameters, units, and available pages depend on the model and configuration of the connected meter.

DIMENSIONS



ORDERING INFORMATION

Model Name	Function Type	LCD Size
AcuHMI	**1**: Remote Data Monitor	**4**
Ordering Example:	**AcuHMI-1-4#**	

#**Note:** Requires an independent 12 – 36 VDC power supply. A single AcuHMI-1-4 can support up to 8 downstream meters and up to 4 concurrent upstream Modbus TCP connections.

Compatible Meters *(Optional)* +

Power and Energy Meters	Description
AcuRev 1320	DIN Rail Energy Meter and Power Quality Analyzer
Acuvim II	Advanced Power and Energy Meter
AcuRev 4100	Multi-Channel Branch Circuit Submeter

+**Note:** Optional meters are standalone and must be ordered separately as distinct products. Only the Acuvim II V3 is supported and older versions of the Acuvim II are not compatible. Refer to the respective product datasheet for additional technical specifications and ordering information.

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Specs Subject To Change Without Notice.

ISO 9001, 14001 & 45001 Certified

ISO 27001 & 50001 Certified