

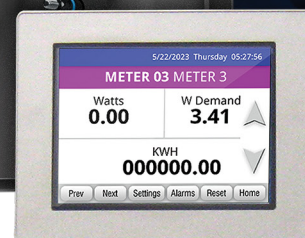
Shark[®] MP200[™]

**DATALOGGING MULTIPOINT
WIFI ENERGY METER**

MP200[™]
24 Single Phase Circuits
or 8 Three Phase Circuits



MDLN
Touch Screen
HMI Display



Introduction

The MP200[™] high density metering system measures and reports on energy usage from 8 three phase circuits or 24 single phase circuits. It consolidates many metering points in a compact, highly rugged design that saves mounting space, installation time, and equipment costs. The MP200[™] unit is ideal for industrial, campus, or multi-tenant commercial installations. Use EIG's EnergyPQA.com[®] AI driven energy management system to collect, view, report on, and analyze energy usage. Identify and improve areas of energy inefficiency. The system can also generate customized monthly energy billing that supports most common rate structures.

Multiple Meters in One Compact Unit

- ANSI C12.20 0.5% Accuracy Class Energy Measurements
- Save Space by Metering 8 Three Phase or 24 Single Phase Circuits with One Unit
- Communicate via Simultaneous Ethernet and WiFi, RS485, or USB
- Modbus RTU, ASCII, or TCP/IP Standard Open Communication Protocols
- Two Historical Logs Offer up to Seven Years of Logging
- Optional Touch Screen HMI Display for Remote Read
- Generate Accurate Submetering Bills and Executive Summary Reports
- Collect and Analyze Submetering Data in the Cloud
- Field Upgradable with V-Switch[™] Technology



Use the MP200™ Metering System to

- Generate accurate reports of energy consumption.
- Analyze peak demand per measured circuit.
- Control outputs to curb peak demand usage.
- Bill tenants and allocate departmental costs based on usage and demand.
- Reduce carbon footprint through usage analysis and cost allocation.

The MP200™ Metering System is Ideal for Use in

- High density electrical distribution panels.
- LEED projects.
- Shopping malls.
- Healthcare facilities.
- Data centers.
- Mixed-use commercial high-rise complexes.
- Branch circuits.
- College campuses.

Advanced Communication Options

- Two standard RS485 ports.
- Standard USB port.
- Optional simultaneous RJ45 wired and 802.11 wireless Ethernet (WiFi) that supports 10 sockets for each port.
- WPA/WPA2/WPA2-Enterprise/WPS, Trust & Go 608 Chip WiFi Security
- Standard protocol support - Modbus ASCII, RTU, TCP/IP.



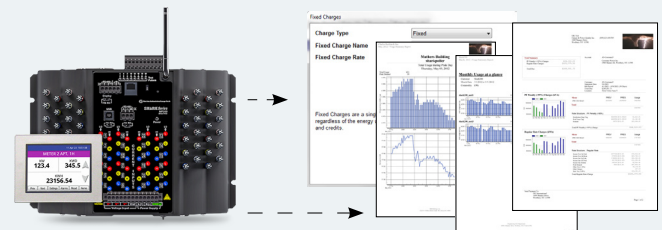
Commodity Metering and Control Outputs

KYZ Pulse Counting Inputs for Commodity Metering

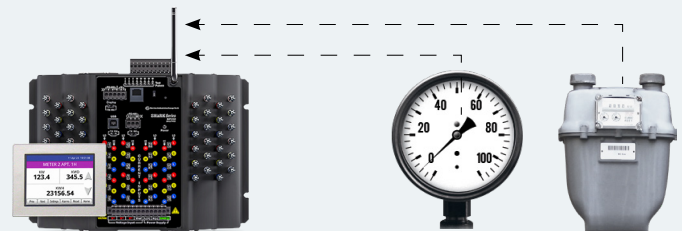
The MP200™ metering system has four KYZ pulse counting inputs. These dry contact inputs count pulses from other devices, such as gas, water, condensate (steam), or any other commodity meter with a pulse output. The additional consumption data they provide supports a total energy management system.

Control Outputs and Limit Alarms

The MP200™ metering system has two relay outputs for control applications. Use EIG's CommunicatorPQA® software to assign up to eight limits that will trigger relay output when an alarm condition occurs. The relay output can be used to generate additional alarms or perform actions, for example, shut down equipment on a peak demand alarm.



The MP200™ Collects Data from Electrical and Other Commodity Usage - EnergyReporterPQA™ Software Produces Automated Bills, Invoices, and Executive Summary Usage Reports from the Data



The MP200™ Unit's KYZ Pulse Inputs Count and Store Water, Gas, and Steam Usage Data

V-Switch™ Keys

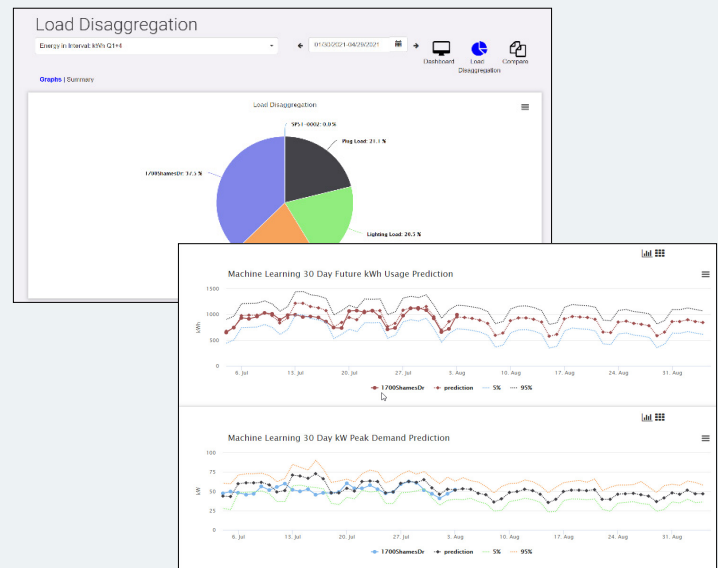
- V1 - Basic transducer with real time data.
- V2 - Basic logger – 2 MB memory.
- V3 - Advanced logger – 32 MB memory.

EnergyPQA.com® AI Driven Energy Management System

The EnergyPQA.com® system provides energy analytics enterprise wide with AI-based predictions and deep insights into power quality. Its energy and demand dashboards and usage charts make it easy to compare energy consumption, power quality, and usage patterns in all metered areas of a building. The MP200™ unit integrates seamlessly with the EnergyPQA.com® system, providing the following capabilities:

- Increase energy usage efficiency by analyzing load disaggregation and usage comparisons.
- Perform proper cost allocation and submetering by billing for actual energy usage versus square footage estimations.
- Reduce costs with predicted peak demand email alerts into the future.
- Identify poorly performing buildings by comparing energy usage across facilities.
- Generate automated reports with detailed energy usage for metered points, facilities, and the enterprise as a whole.
- Determine impact on the environment and assess the success of sustainability initiatives by monitoring total and per location carbon footprint.

Perform Load Disaggregation for Usage Comparison



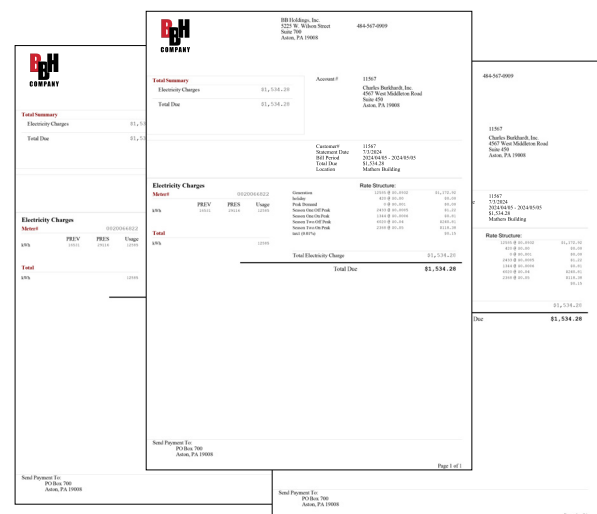
View 30 Day Predicted Energy Usage and Demand

MP200™ Metering System Energy Analysis and Billing

Use EnergyReporterPQA™ Software with the MP200™ Meter

- Automatically import usage data from the MP200™ unit.
- Track energy use by customer/location/meter.
- Generate accurate tenant submetering bills and invoices.
- Bill for other commodity usage, e.g., water.
- View data over current and prior months.
- Copy and paste data or charts into word processors, spreadsheets, or emails.

- Compare usage with temperature, humidity, or pressure.
- Generate executive summary usage reports.



Generate Bills and Invoices

Optional Touch Screen HMI Display

Features of the Display Include

- Two compact sizes - 3.5" or 5.7".
- Multiple connection types - serial and Ethernet (display auto-detects connection).
- Low power consumption.
- Easy to install - fits in 22 mm mounting hole for quick in-field installation.
- Can be used for remote or local display.
- 65k color, touch screen technology.
- Pre-configured to provide readings for MP200™-Y three phase metering system and MP200™-S single phase metering system.
- Pre-configured to provide watts, energy, and demand for every metering point.
- Phasor diagrams for each circuit let you check wiring conditions.

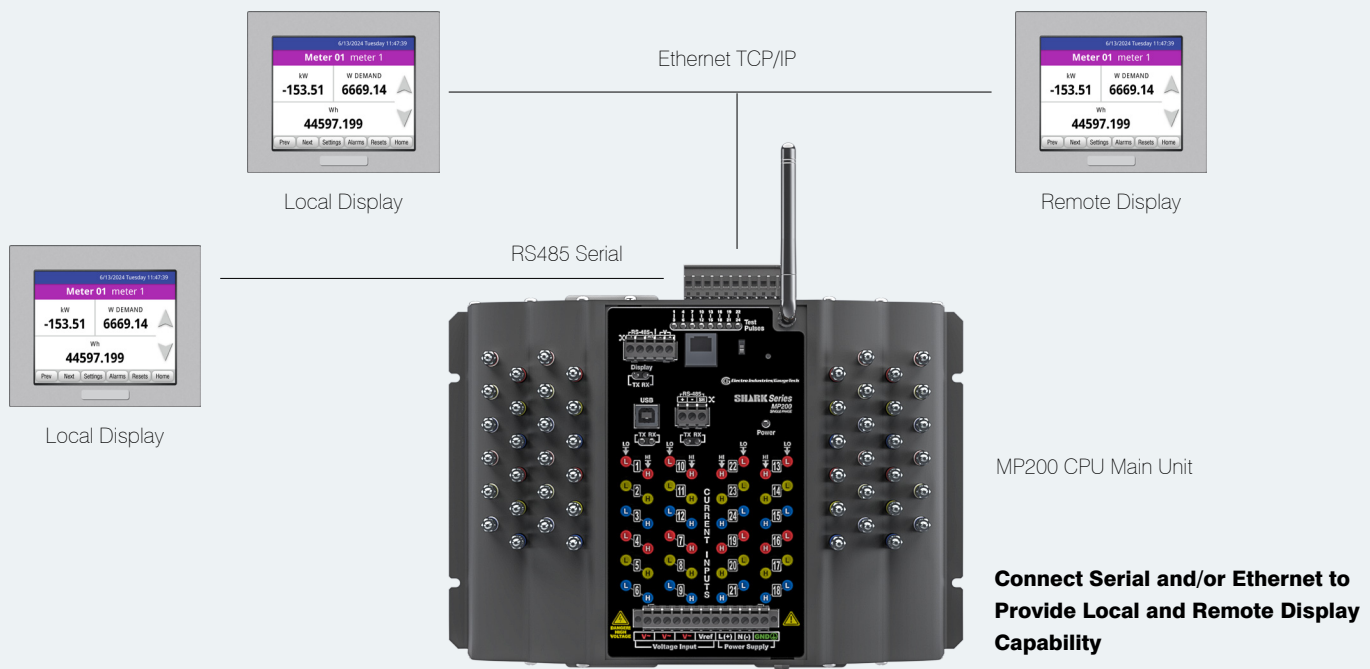


Color HMI Display Connected via Serial or Ethernet

Easy-to-Install Display Kit

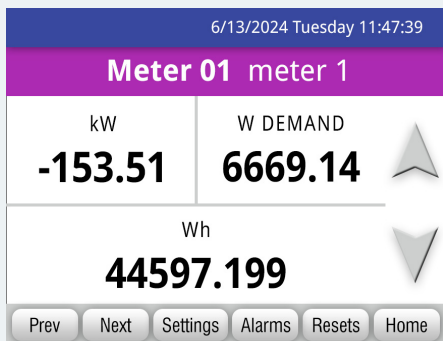
The display is powered by 24 V DC and comes equipped with a standard plug power supply to remotely power the unit. Mounting tools are included in the display kit. The display comes pre-programmed and is ready to use out of the box.

Example of Local and Remote Display Connection

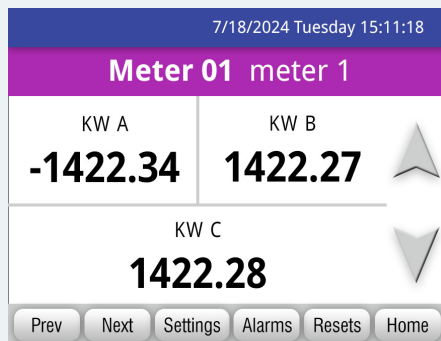


Example Screens

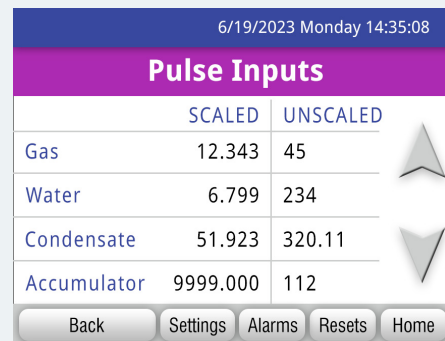
Simple to Read, User-friendly User Interface



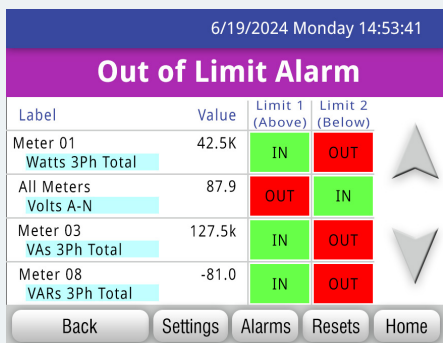
KWATTS, W DEMAND, WATT-HOURS



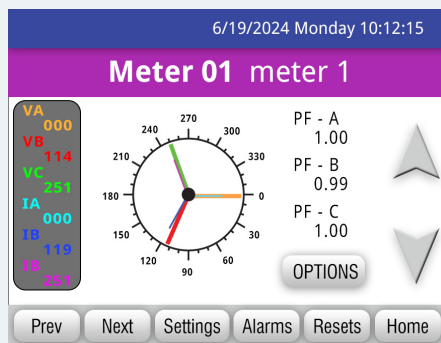
KWATTS PHASE A, KWATTS PHASE B, KWATTS PHASE C



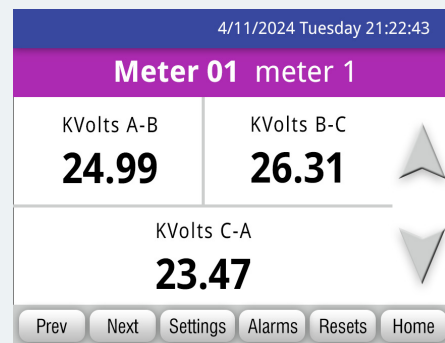
PULSE INPUTS



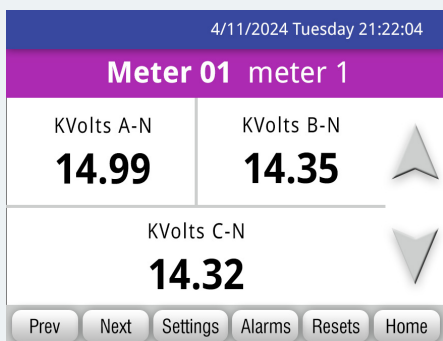
OUT OF LIMIT ALARM



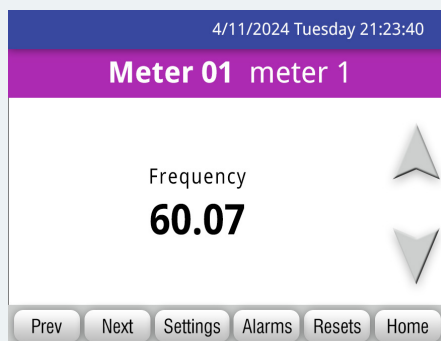
THREE PHASE PHASOR DIAGRAM MP200-Y UNIT



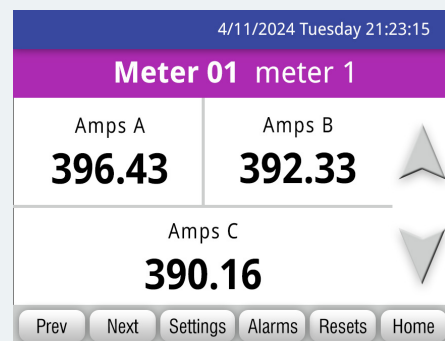
VOLTAGE PHASE TO PHASE



VOLTAGE PHASE TO REFERENCE



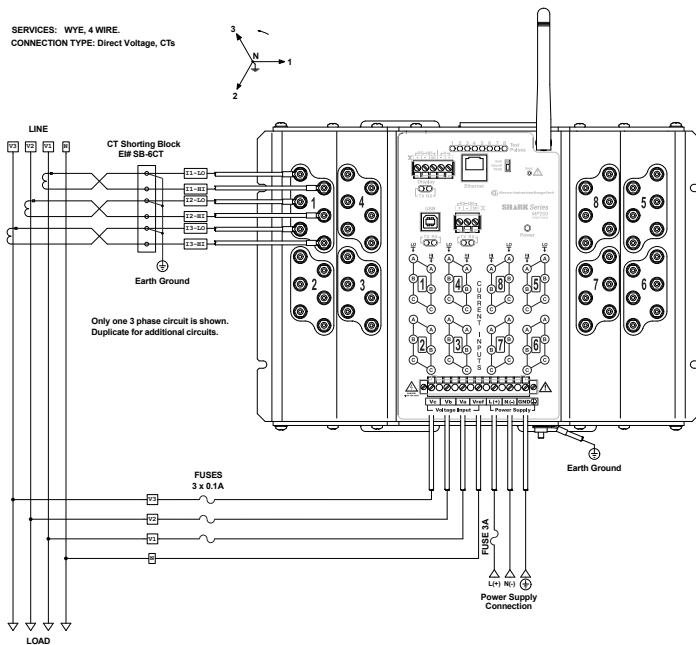
FREQUENCY



CURRENT

Wiring Diagrams

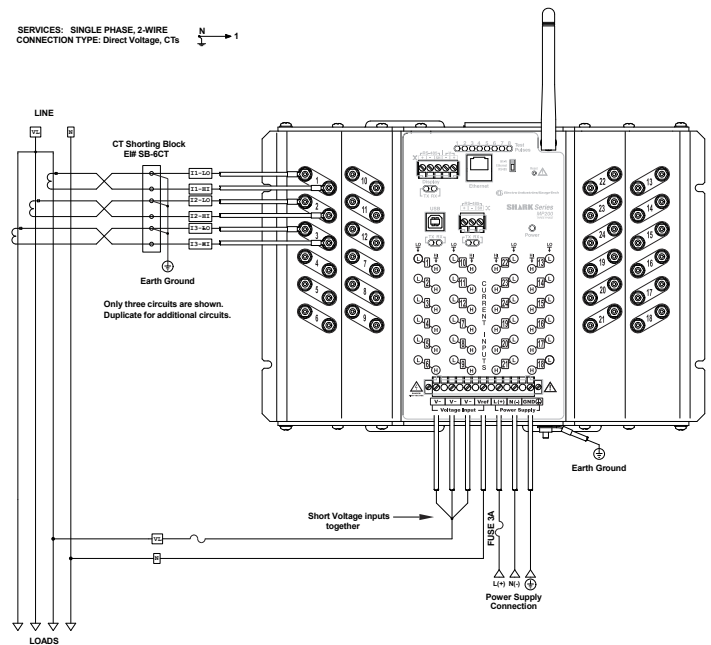
Note: See the MP200™ User Manual for additional wiring diagrams and instructions.



THREE PHASE, 4 WIRE WYE SYSTEM WITH 3 CTs:
MP200™-Y METERING SYSTEM

One three phase circuit shown. Multiply by up to 8 circuits.

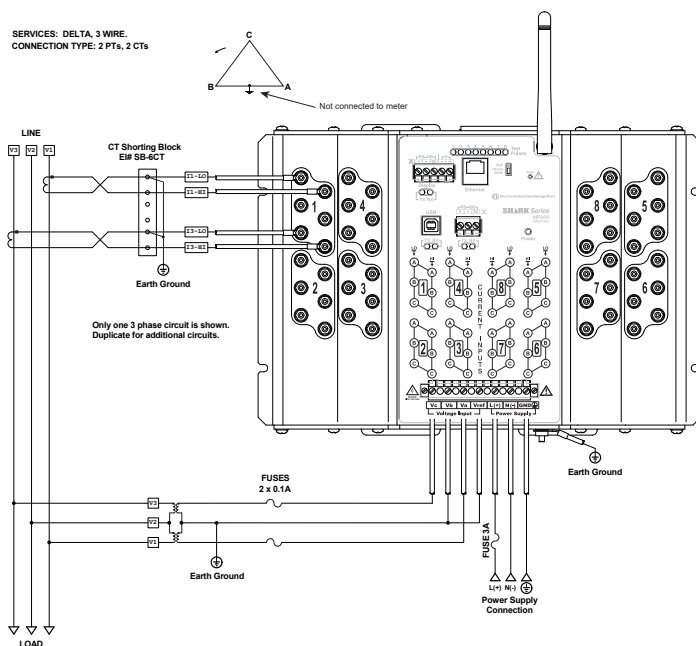
Note: All voltages must be common per phase on each circuit.



SINGLE PHASE, 2 WIRE DIRECT:
MP200™-S METERING SYSTEM

3 circuits are shown. Multiply by up to 24 circuits.

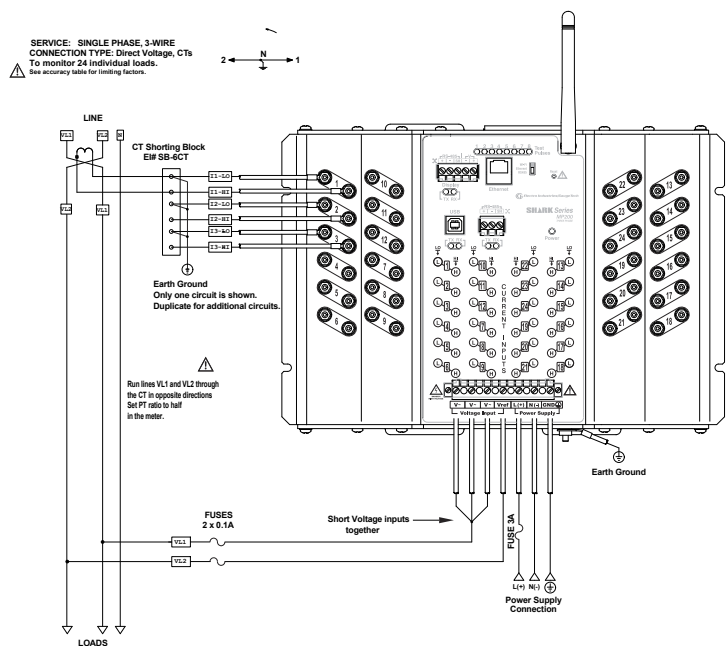
Note: All current must originate from a common voltage source.



THREE PHASE, 3 WIRE DELTA SYSTEM WITH 2 PTs AND 2 CTs:
MP200™-Y METERING SYSTEM

One three phase circuit shown. Multiply by up to 8 circuits.

Note: All voltages must be common per phase on each circuit.



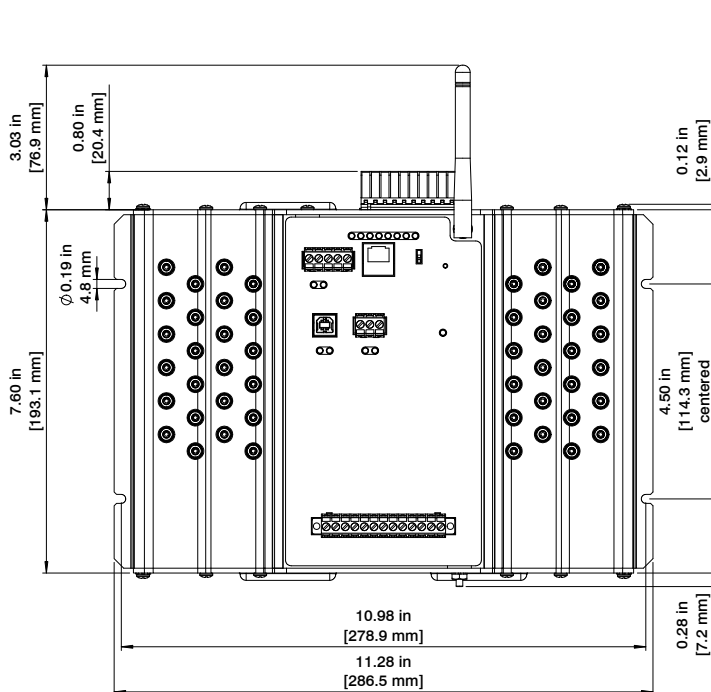
SINGLE PHASE, 3 WIRE DIRECT WITH 1 CT:
MP200™-S METERING SYSTEM

1 circuit is shown. Multiply by up to 24 circuits.

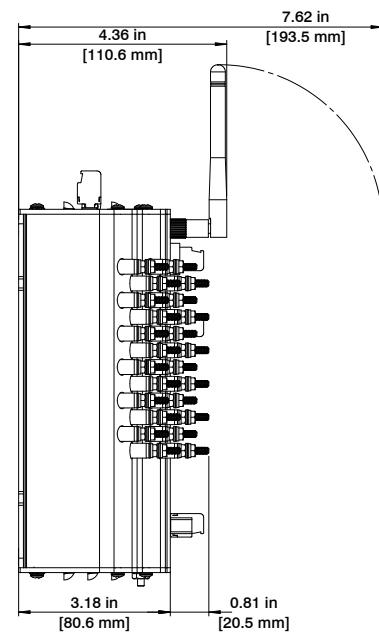
Note: All current must originate from a common voltage source.

Dimensional Drawings

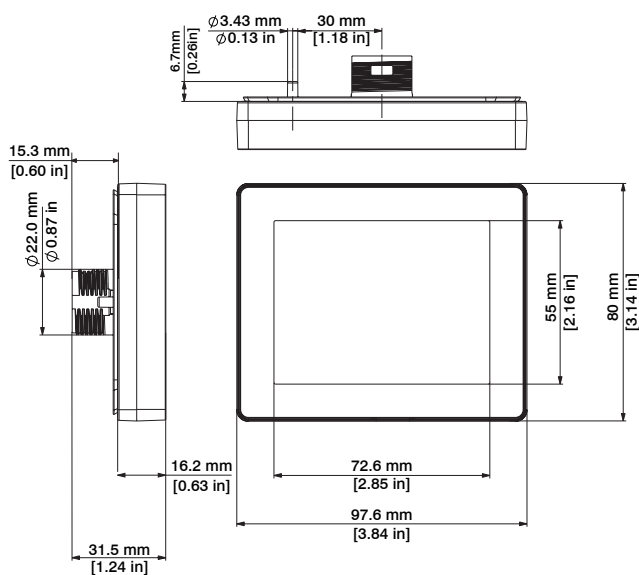
Note: See the MP200™ User Manual for full installation instructions.



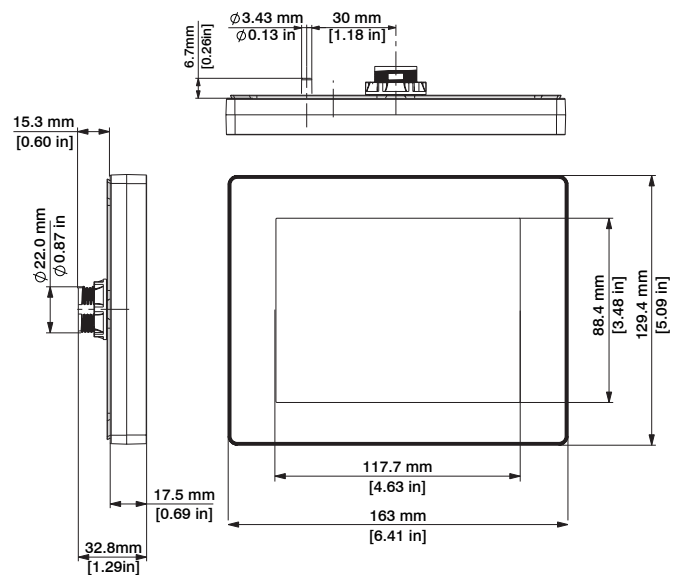
MP200™ UNIT'S FRONT DIMENSIONS



MP200™ UNIT'S SIDE DIMENSIONS



MDSN DIMENSIONS, 3.5" DISPLAY



MDLN DIMENSIONS, 5.7" DISPLAY

Voltage Inputs

- Absolute Range: Up to 576 V Line to Neutral, Up to 721 V Line to Line
- Universal Voltage Input
- Input withstand Capability - Meets IEEE C37.90.1 (Surge Withstand Capability)
- Programmable Voltage Range to Any PT Ratio
- Supports: 3 Element WYE, 3-Wire Delta, Single Phase 2 and 3-Wire
- Burden: 0.09 VA/Phase Max at 600 V, 0.014 VA at 120 V
- Input wire Gauge: AWG 12-26 (0.08-2.5) mm²

Current Inputs

- Class 10: (0.005 to 10) A, 5 A Nominal CT Secondary
- Class 2: (0.001 to 2) A, 1 A Nominal CT Secondary
- Programmable Current to Any CT Ratio
- Burden 0.005 VA Per Input Max at 11 A
- Pickup Current: 0.1% of Nominal
 - Class 10: 5 mA
 - Class 2: 1 mA
- Continuous Current Withstand: 20 A

Isolation

- All Inputs and Outputs are galvanically isolated to 2500 V.

Environmental Rating

- Storage: (-20 to +70) °C / (-4 to +158) °F

- Operating: (-20 to +60) °C / (-4 to +140) °F
- Humidity: to 95% RH Non-Condensing

Sensing Method

- RMS
- Sampling at 400+ Samples per cycle on All channels Measured Readings Simultaneously

Update Rate

- Once per Second

Power Supply

- (90-300) V AC @ 50/60 Hz or (100-150) V DC/18 VA Max

Communication Format

- RS485 (Com 1 and Com 3)
 - Baud Rate: 9,600 to 57,600
 - Address: 001-247
 - 8-Bit, Even, Odd, No Parity
 - Modbus RTU, Modbus ASCII
- Ethernet/WiFi (Optional for Com 1)
 - RJ45 10/100BaseT Ethernet and 802.11b Wireless
 - Modbus TCP/IP
 - Simultaneous Wired and Wireless Communication
- USB (Com 2)
 - Port Baud Rate: 57,600
 - Modbus ASCII

Shipping Dimensions and Weights

- MP200 Unit Shipping Dims: 12.81(L) x 15.31(W) x 8.13(H) in./32.54(L) x 38.89(W) x 20.65(H) cm

- MP200 Unit Shipping Weight: 7 lbs.
- Display Shipping Dims: 12.25(L) x 8.75(W) x 10(H) in. /31.12(L) x 22.23(W) x 25.4(H) cm
- Display Shipping Weight: 2.6 lbs.

Meter Accuracy

- Voltage L-N 0.3% of reading @ (69 to 480) V
- Voltage L-L 0.5% of reading @ (120 to 600) V
- Current Phase: 0.3% of reading @ (0.15 to 5) A
- W/Wh: 0.5% of reading @ (0.15 to 5) A @ (69 to 480) V @ +/- (0.5 to 1) lag/lead PF
- VAR/VARh: 1.0% of reading @ (0.15 to 5) A @ (69 to 480) V @ +/- (0 to 0.8) lag/lead PF
- VA/VAh/PF: 1.0% of reading @ (0.15 to 5) A @ (69 to 480) V @ +/- (0.5 to 1) lag/lead PF
- Frequency: +/- 0.01 Hz
- See product documentation for complete accuracy specifications

Enclosure

- Rugged Aluminum for Transducer

MDLN/MDSN Specifications

- QVGA (320x240)
- LED Backlight - 50,000 MBTF
- UL, CE and RoHS Compliant
- Rated for Indoor Use
- Storage: (-20 to +60) °C / (-4 to +140) °F

- Operating: (0 to +50) °C / (+32 to +122) °F
- Power Consumption - 6.8 Watts
- 24 V DC Power Input

Compliance

- ANSI C12.20 Accuracy, 0.5 CL
- IEC 62053-22 Accuracy, 0.5S
- CE (IEC 61000-6-2 & IEC 61000-6-4 & IEC 61326-1)
 - IEC 61000-4-2 Class B Ed. 1.2 2001*
 - IEC 61000-4-3 Ed. 2.1 2002 Class A*
 - IEC 61000-4-4 Ed. 2 2004 Class A*
 - IEC 61000-4-5 Class A Ed. 1.1 2001*
 - IEC 61000-4-6 Class A Ed. 2.1 2004*
 - IEC 61000-4-8 Ed. 1.1 Class A 2001*
 - IEC 61000-4-11 Ed. 2 2004 Class B*
 - CISPR11 Class A Ed. 4.2 2002*
 - CISPR22 Class A Fifth Ed. 2005*
- (WiFi Module) ERM: Wideband transmission system operating in the 2.4 GHz ISM band using wideband modulation techniques. V1.6.1 (WiFi Module) Information technology equipment-Safety-part 1: General requirements: 2001
- EU Directive 2011/65/EU (RoHS 3 Directive)
- REACH Compliant
- Certified to UL 61010-1 and CSA C22.2 No. 61010-1, UL File: E250818*

* Third party lab tested

Ordering Information - All fields must be filled in to create a valid part number.

	Model	Circuit Configuration	Frequency	Current Class	V-Switch™ Pack	Communication
Option Numbers:	-	-	-	-	-	-
Example:	MP200	- Y -	60	- 10 -	- V2 -	- WiFi
	MP200	Y Three Phase WYE/Delta	50 50 Hz System	10 5 A Nominal CT Secondary	V1 Transducer	X RS485 Only
		S Single Phase ONLY	60 60 Hz System	2 1 A Nominal CT Secondary	V2 Basic Logger	WiFi Ethernet and WiFi
					V3 Advanced Logger	
Optional LCD Displays						
MDSN	3.5" Touch Screen HMI Display with installation kit	MDLN	5.7" Touch Screen HMI Display with installation kit		Display Installation Kit includes	Display and Rear Module, RS485 Serial cable, Power Supply, Mounting Hardware
Additional Accessories						
Communication Converters		Unicom 2500 - RS485 to RS232 Converter			Unicom 2500-F - RS485 to RS232 to Fiber Optic Converter	
Compliance Documents		Calibration, Part#: CCal - Certificate of Calibration with NIST traceable Test Data.				
Software Option Numbers		COMPQA6P1Y - CommunicatorPQA® Software, Single License			ENERGYPQA-1Year - AI Driven Energy Management System	
Shorting Block*		EI-SB-6TC - CT Shorting Block				
Solid Core Current Transformers*		EI-2DARL-101 - ANSI Rated 100/5A solid core CT with 1.0" window		EI-2DARL-201 - ANSI Rated 200/5A solid core CT with 1.0" window		EI-5ARL-401 - ANSI Rated 400/5A solid core CT with 1.5" window
Split Core Current Transformers*		EI-1SP-100-00 - 100/5A split core CT with 0.84" x 2.00" window		EI-1SP-200-00 - 200/5A split core CT with 0.84" x 2.00" window		EI-WC4-400-RA05 - 400/5A split core CT with 1.3" x 1.7" window
*For three phase applications EIG recommends the EI SB-6TC Shorting Block and 3 CTs per three phase circuit.						

*For three phase applications EIG recommends the EI SB-6TC Shorting Block and 3 CTs per three phase circuit.

1800 Shames Drive
Westbury, NY, 11590

1-877-EIMETER
(1-877-346-3837)

Tel: 516-334-0870
Fax: 516-338-4741

Email: EIG_sales@hubbell.com
Website: www.electroind.com

