SHARK® MP200™

Data Logging Multipoint WiFi Energy Meter

11 Apr 23 10:51:08

METER 2 APT. 1H

KW
123.4

KWD
345.5

KWH
23156.54

Prev | Next | Settings | Alarms | Reset | Home

MP200™ Multi-Circuit Metering System
24 Single Phase Circuits or
8 Three Phase Circuits

MDLN
Touch Screen
HMI Display

For Remote Meter Reading

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
- **New** 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 Upgradeable with V-Switch™ Technology

HUBBELL®

Electro Industries GaugeTech™

C (UL) US
LISTED
ELECTRICAL & ELECTRONIC
MEASURING & TEST EQUIP.
22CZ

CE

ISO
CERTIFIED COMPANY
9001:2015

DESCRIPTION

The MP200™ high density metering system measures and reports on energy usage from 8 three phase Wye circuits or 24 single phase circuits. Consolidate many metering points in a compact, highly rugged multi-circuit 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® system to collect energy usage data, view dashboards, provide reporting, and analyze energy use reduction opportunities. The system can also generate customized monthly energy billing that supports most common rate structures.

The MP200™ Metering System Lets You:

- 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.

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.
- Standard protocol support - Modbus ASCII, RTU, TCP/IP.

Collect Data from Remote Units over WiFi or Other Communication Channels

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.
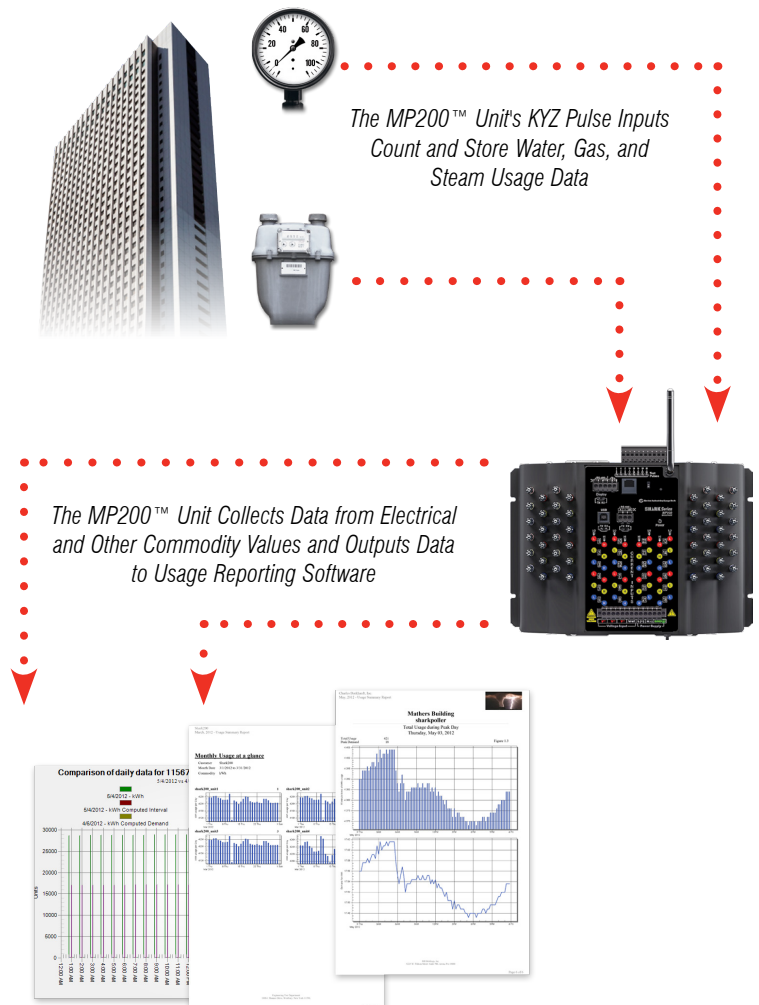- Reducing carbon footprint through usage analysis and cost allocation.

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, to shut down equipment on a peak demand alarm.

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

The MP200™ Unit Collects Data from Electrical and Other Commodity Values and Outputs Data to Usage Reporting Software

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 enterprise as a whole.

- Determine impact on the environment and assess the success of sustainability initiatives by monitoring total and per location carbon footprint.
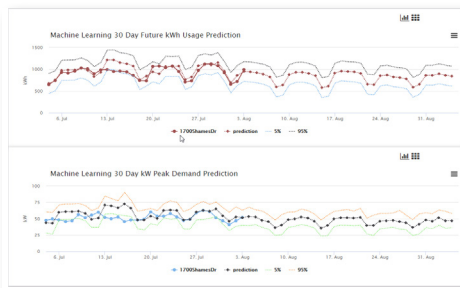
View 30 Day Predicted Energy Usage and Demand
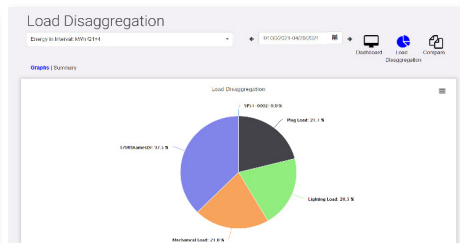
*Perform Load Disaggregation for Usage Comparison*
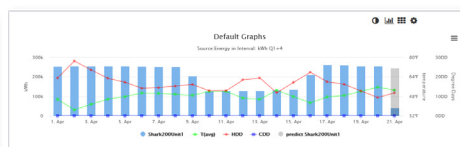
View Degree Days for Selected Date Range

MP200™ METERING SYSTEM UNIT ENERGY USAGE 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.
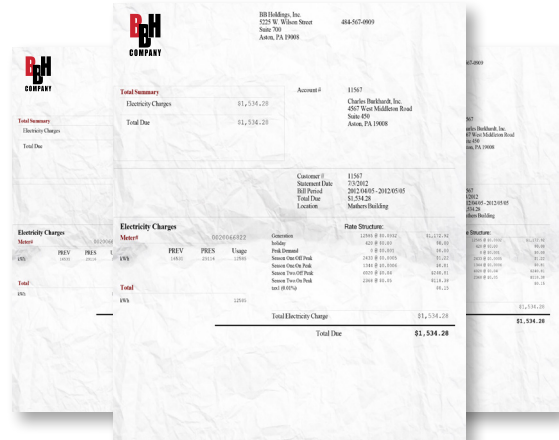
Generate Bills and Invoices

Executive Summary Usage Reports

OPTIONAL TOUCH SCREEN HMI DISPLAY

The MP200™ metering system offers an optional HMI 65k color touch screen LED display. The display is available in two sizes - the larger display (MDLN) is 5.7" and the smaller display (MDSN) is 3.5". The display is easy to install and operate. It can communicate with the MP200™ metering system through the MP200™ unit's Port 3 (RS485 serial) or through the optional RJ45 Ethernet port.
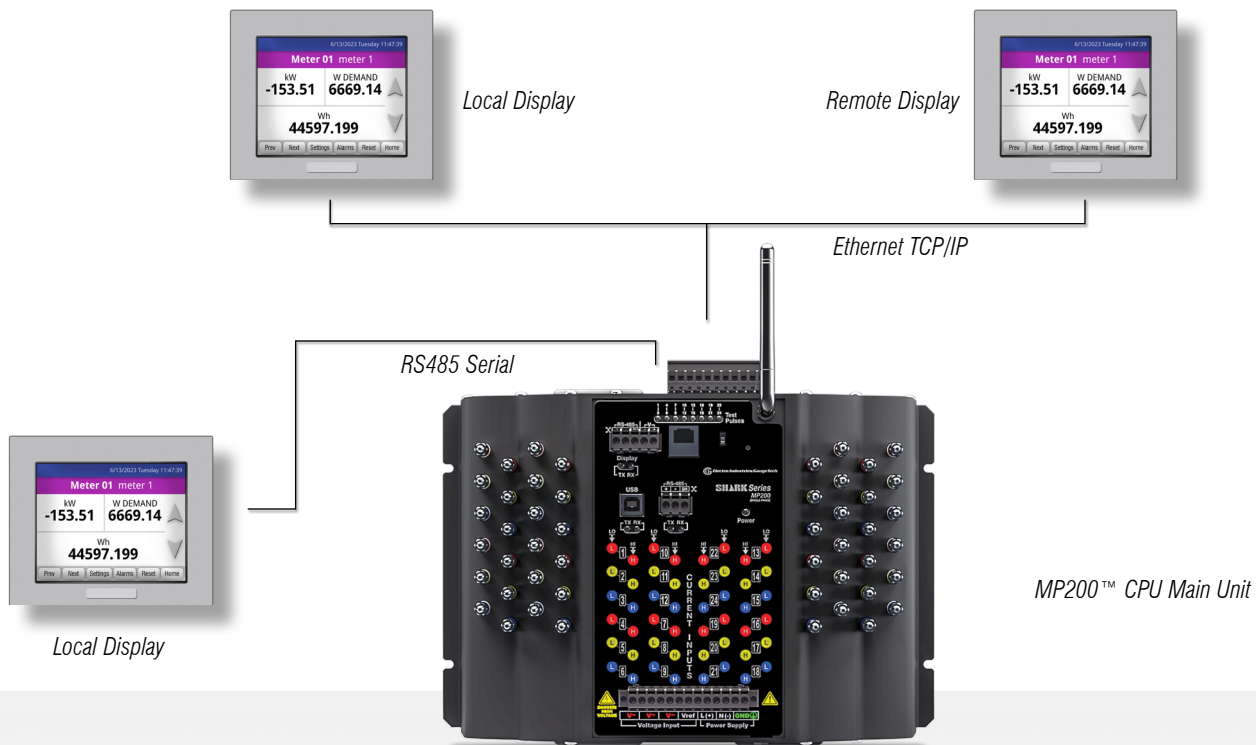
Features of the Display Include:

- 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.

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.

MDLN 5.7"

MDSN 3.5"

Color HMI Display Connected via Serial or Ethernet

Example of Local and Remote Display Connection

Local Display

Remote Display

Ethernet TCP/IP

RS485 Serial

MP200™ CPU Main Unit

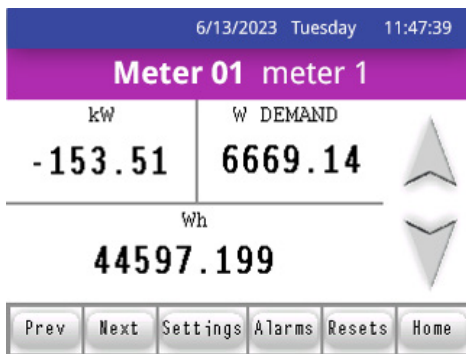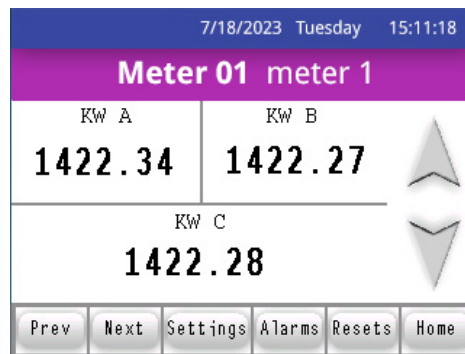*Local Display*

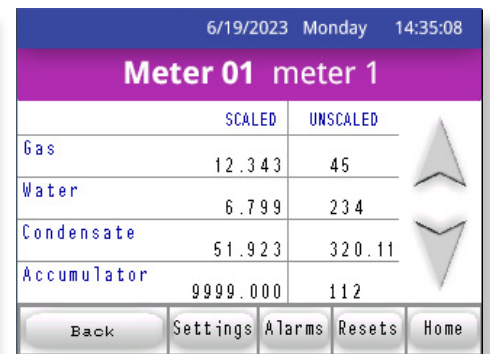## Connect Serial and/or Ethernet to Provide Local and Remote Display Capability

EXAMPLE SCREENS
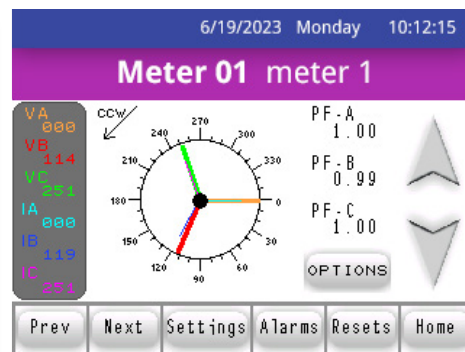

kWatts, W Demand, Watt-hours

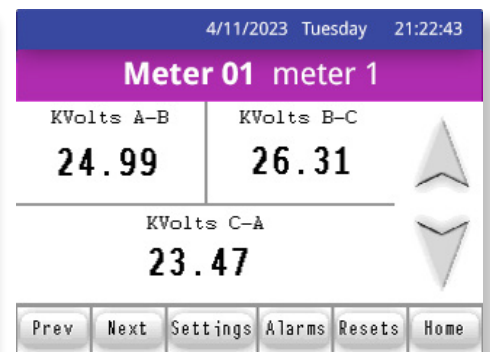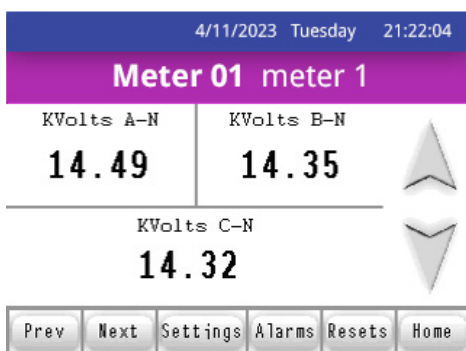*kWatts Phase A, kWatts Phase B, kWatts Phase C*

Pulse Inputs

Out of Limit Alarm

Three Phase Phasor Diagram MP200-Y Unit

Voltage Phase to Phase

Voltage Phase to Reference
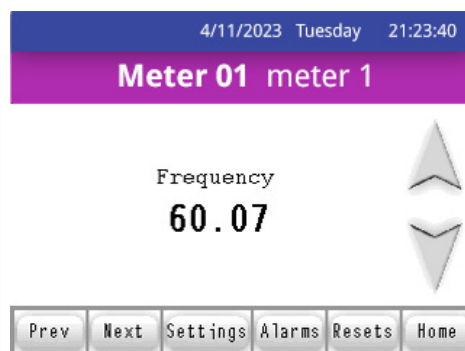
Frequency
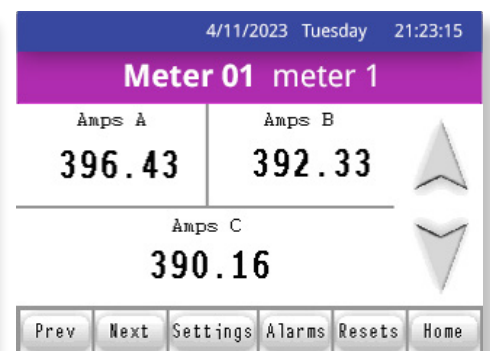
Current

Simple to Read, User-friendly User Interface

WIRING DIAGRAMS

Note: See the *MP200™ Metering System Installation and Operation Manual* for additional wiring diagrams and instructions.
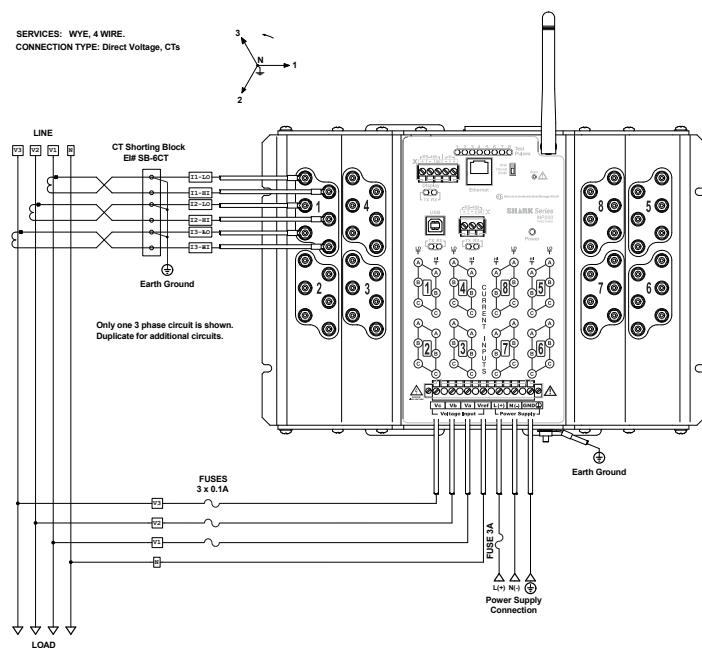
Three Phase, 4 Wire WYE System with 3 CTs: MP200™-Y Metering System

One three phase circuit shown. Multiply by up to 8 circuits.
Note: All voltages must be common per phase on each circuit.
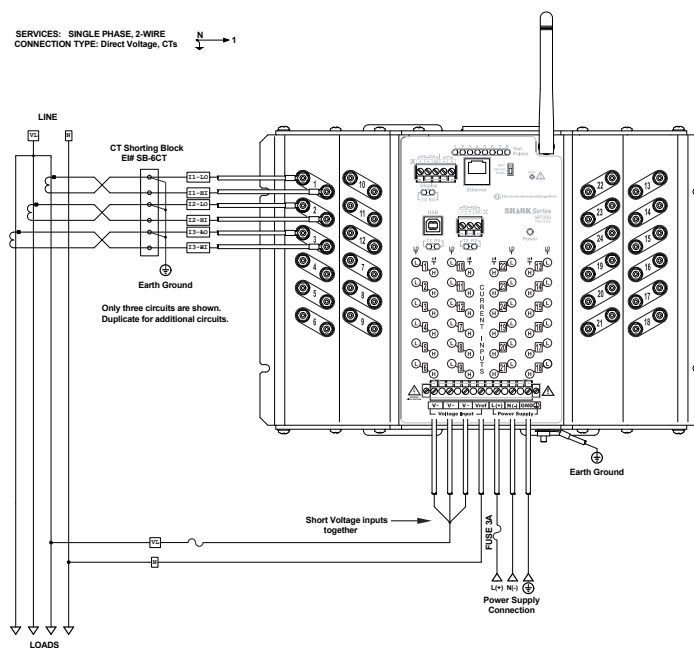
Single Phase, 2 Wire Direct: MP200™-S Metering System

3 circuits are shown. Multiply by up to 24 circuits.
Note: All current must originate from a common voltage source.
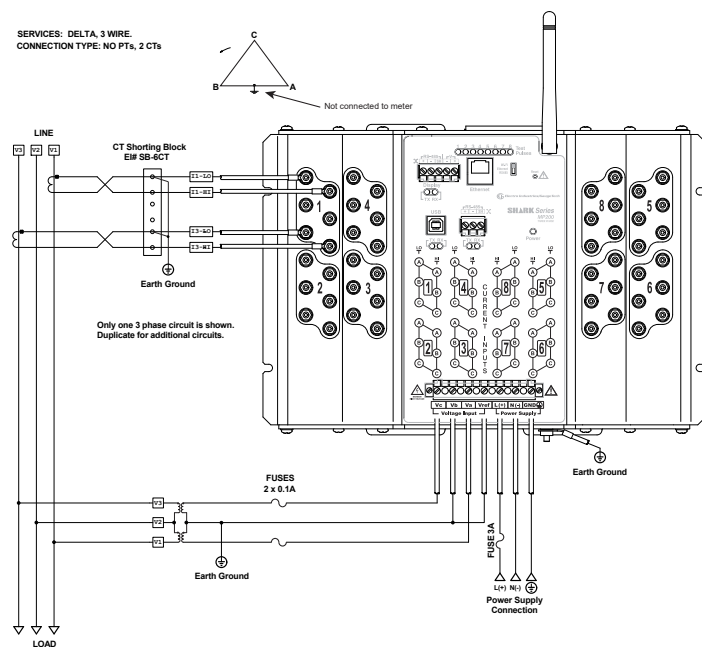
Three Phase, 3 Wire Delta System with 2 CTs: MP200™-Y Metering System

One three phase circuit shown. Multiply by up to 8 circuits.
Note: All voltages must be common per phase on each circuit.
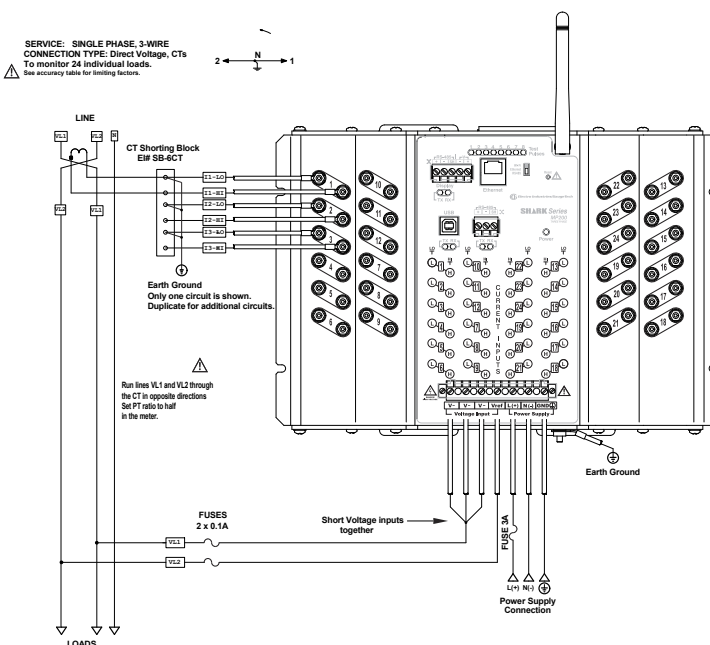
Single Phase, 3 Wire Direct with 1 CT: MP200™-S Metering System

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™ Metering System Installation and Operation Manual* for full installation instructions.
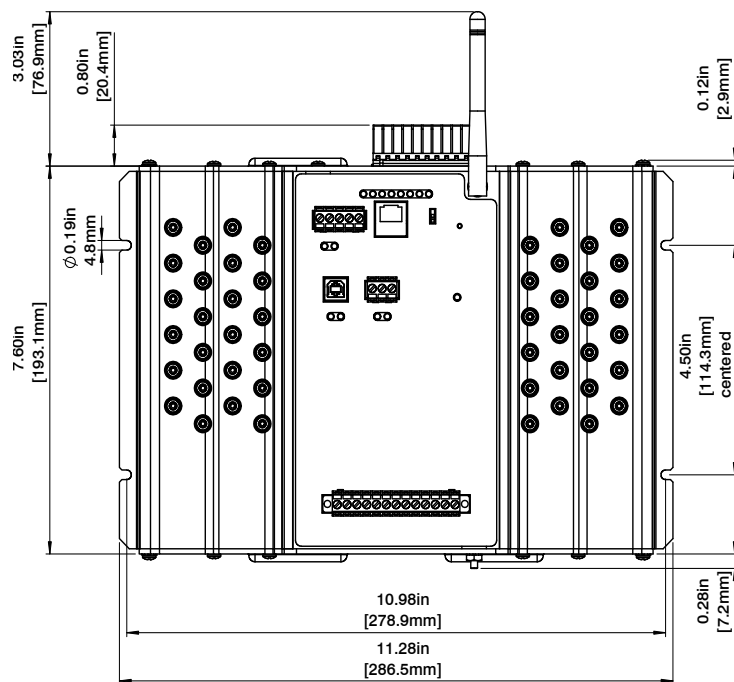
MP200™ Unit's Front Dimensions
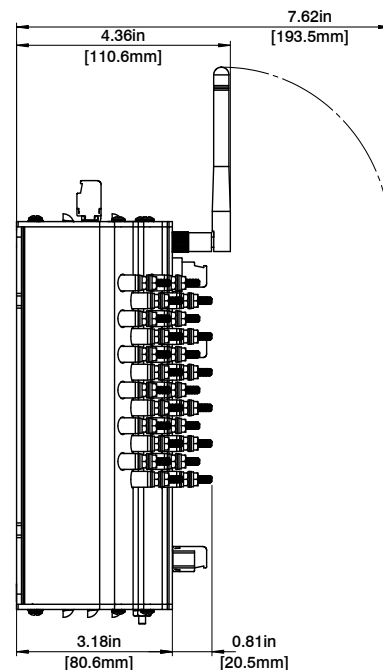
MP200™ Unit's Side Dimensions
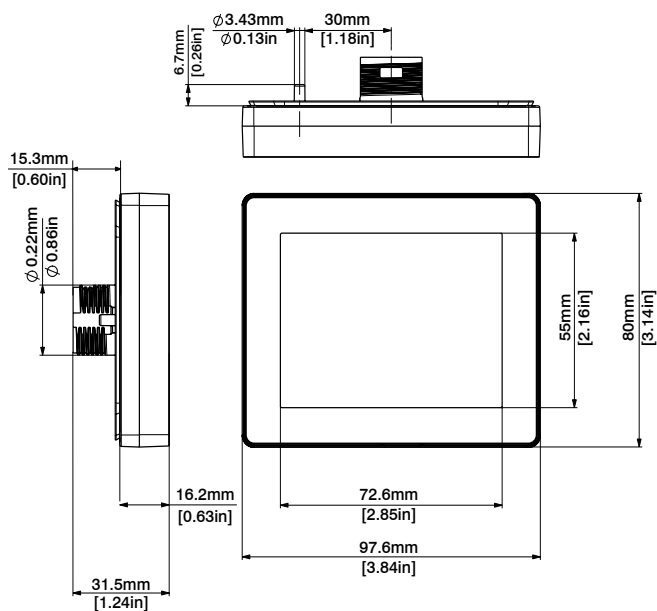
MDSN Dimensions
3.5" Display
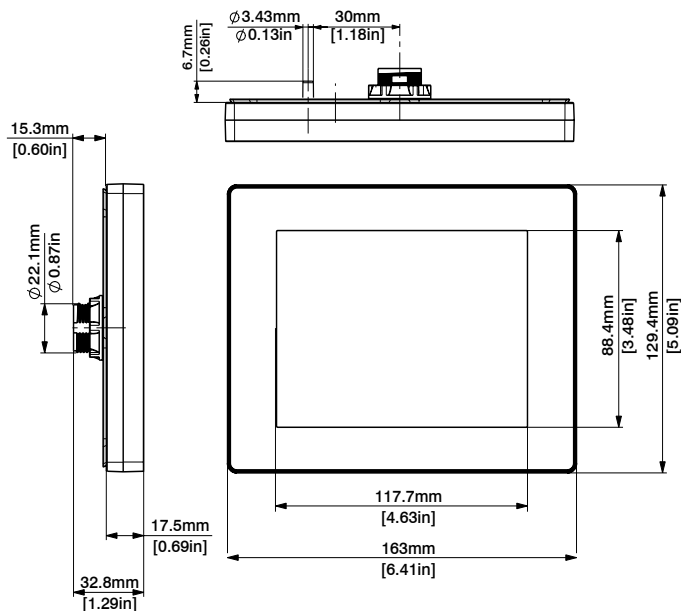
MDLN Dimensions
5.7" Display

Specifications

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) mm^2

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) ºC / (-4 to +158) ºF
- Operating: (-20 to +60) ºC / (-4 to +140) ºF

- 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	Com
Option Numbers:	-	-	-	-	-	
Example:	**MP200**	**Y** -	**60** -	**10** -	**V2** -	**WiFi**
	MP200	**Y** Three Phase WYE/Delta	**50** 50 Hz	**10** 5 A Nominal CT Secondary	**V1** Transducer	**X** RS485 Only
		S Single Phase ONLY	**60** 60 Hz	**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

Certificate of Calibration, Part #: CCal - This provides Certificate of Calibration with NIST traceable Test Data.

Software Option Numbers

COMPQA5P1Y: CommunicatorPQA® Software Single License
ENERGYPQA-1Year: AI Driven Energy Management Solution

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

NEMA 1 Rated Enclosure available

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

ENCMP200 Web Page

MP200 Web Page

HUBBELL

Electro Industries GaugeTech™