

**GENERIC SPECIFICATION FOR MULTI-POINT  
MULTIFUNCTION POWER AND ENERGY METERING SYSTEM  
MP200**

2. PRODUCT

2.1 Multi-point Metering Unit ("Unit")

- A. The Unit shall be UL listed and CE marked.
- B. The Unit shall consist of either of two circuit configurations: 8 multifunction electrical measuring points (meters) for 3 phase power systems or 24 multifunction electrical measuring points (meters) for single phase power systems. The Unit's meters shall perform to spec in harsh electrical applications in high and low voltage power systems.
  - 1. The Unit shall support 3 element Wye or single phase 3-wire and 2-wire systems.
  - 2. The Unit shall accept universal voltage input.
  - 3. The Unit's surge withstand shall conform to IEEE C37.90.1.
  - 4. The Unit shall be user programmable for voltage range to any PT ratio.
  - 5. The Unit shall accept a burden of up to .09VA per phase, Max at 600 Volts, and 0.014VA at 120 Volts.
  - 6. The Unit shall accept a voltage input range of up to 576 Volts Line to Neutral, and up to 721 Volts Line to Line with a universal voltage system input.
  - 7. The meters shall accept a current reading of up to 20 Amps continuous.
  - 8. The Unit/meters shall have color-coordinated voltage and current inputs.
- C. The Unit's meters shall have an accuracy of +/- 0.5% or better for Volts and Amps, and 0.5% for power and energy functions. The Unit shall meet the accuracy requirements of IEC62053-22 (Class 0.5%) and ANSI C12.201(Class 0.5%).
  - 1. The meters shall provide true RMS measurements of voltage, phase to neutral and phase to phase; current, per phase (for the three phase meter circuit configuration) and neutral.
  - 2. The Unit shall provide sampling at 400+ samples per cycle on each measured channel simultaneously, at 24-bit resolution.
- D. The Unit shall have optional data-logging memory of up to 32MB. With data-logging, the Unit shall support:
  - 1. Two pre-configured Historical logs: Log 1 for trending Voltage and Frequency, Log 2 for trending Energy use over time.
  - 2. An Alarm/Limits log that records the state of the 16 limits that can be programmed for the meter.
  - 3. A System Events log to store events that happen in, or to the meter, including Startup, Reset commands, Log retrievals, and attempts to log on with a password.
  - 4. An I/O Change log to record changes in the inputs and outputs of the Relay Output/Status Input board.

- E. The Unit's meters shall be traceable revenue meters. The Unit which shall contain at least 8 utility grade test pulses allowing power providers to verify and confirm that the meters are performing to their rated accuracy.
- F. The Unit shall offer the following communication ports.
  - 1. Com 1 shall support RS485 and optional RJ45 Ethernet/802.11b WiFi. It shall support Modbus RTU, Modbus ASCII, and Modbus TCP; and baud rates from 9,600 to 57,600.
  - 2. Com 2 shall be a USB Serial port. It shall support Modbus ASCII and a baud rate of 57,600.
  - 3. Com 3 shall support RS485. It shall support Modbus RTU and Modbus ASCII; and baud rates from 9,600 to 57,600.
- G. The Unit shall have a Relay Output/Status Input board.
  - 1. The board shall have 2 Relay Outputs for control applications. The relay outputs shall be able to be triggered by the user-programmed limits in the meters. The user shall be able to assign up to 16 limits, including below-and above-limit conditions for any value the meter measures.
  - 2. The board shall have 4 KYZ Counting Inputs. The KYZ inputs shall be able to be configured to count pulses from gas, water, condensate, and other commodity measuring devices.
- H. The Unit shall provide user configured fixed window or rolling window demand so the user can set up the particular utility demand profile.
  - 1. Readings for kW, kVAR, kVA and PF shall be calculated using utility demand features. All other parameters shall offer max and min capability over the user selectable averaging period.
  - 2. Voltage shall provide an instantaneous max and min reading displaying the highest surge and lowest sag seen by the meter.
- I. The Unit shall be upgradeable after installation. Upgrade packs accessed through the optional Com port shall allow the base model (V1) to be upgraded to support basic load profiling with 2MB of Memory (V2) and upgraded to support advanced load profiling with 32MB of memory (V3).
- J. The Unit shall consist of an all-metal enclosure and shall have the following physical properties:
  - 1. The Unit shall measure 7.6(L) x 11.28(W) x 4.36(H) in / 19.3(L) x 28.65(W) x 11.07(H) cm.
  - 2. The Unit shall be able to be mounted within an electrical panel.
  - 3. The Unit shall have a stud-base connection for current inputs.
- K. The Unit shall have an optional display for remote or local reading.
  - 1. The display shall be available in two window sizes - 3.5" and 5.7".
  - 2. The display shall be a touch-screen LCD display, NEMA 4X (Indoor Use) capable.

3. The display shall support over 65k colors.
  4. The display shall support RS485 serial and RJ45 Ethernet communication, simultaneously.
  5. The display shall auto-detect the type of communication being used.
  6. The display shall be pre-configured to display readings for both the 8 three phase meters and the 24 single phase meters circuit configurations.
  7. The display shall provide the names of each circuit being metered.
  8. The display shall also provide important diagnostic data like meter date and time, a graphical phasor diagram, and out of limit conditions.
  9. The display shall be capable of displaying non-electrical parameters like water, gas, and steam usage.
  10. The unit shall have the capability of utilizing both a local and remote display, simultaneously.
- L. The Unit shall have a 4-year warranty.
- M. The following options shall be available for ordering:

<b>Model</b>	<b>Circuit Configuration</b>	<b>Frequency</b>	<b>Current Class</b>	<b>Vswitch™ Pack*</b>	<b>Com</b>
MP200	-Y Three Phase	-60 60 Hz	-10 10 Amp Secondary	-V1 Transducer	-X RS485 Only
	-S Single Phase	-50 50 Hz	-2 2 Amp Secondary	-V2 Basic Logger	-WIFI Ethernet and WIFI
				-V3 Advanced Logger	

**Optional Display:**

MDLN 5.7" Touch screen LED display

MDSN 3.5" Touch screen LED display

- N. Acceptable product is Electro Industries/GaugeTech, Model:  
MP200-Y-60-10-V1-X or MP200-S-60-10-V1-X.

For specification information, contact:

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