



MD-3HD Model Power Meters

Description

Siemens Industry's MD-3HD Model Power Meters are submetering devices designed to provide real time, accurate electricity metering to enable proper control over energy costs. The meter can capture kWh/kW energy and demand data, as well as virtually all relevant energy parameters for diagnostics and monitoring on three-phase or single-phase circuit installations. The meters' flexibility, size, and ease-of-use make them ideal tools for gathering detailed consumption information in commercial, industrial, governmental, and retail environments.

The meters use direct connections to each phase of the voltage and various interchangeable current transformer (CT) options such as split-core CTs or flexible Rogowski Coils (for large loads or large cables and bussbars) to monitor current on each phase. All of Siemens' current transformers are internally shunted for intrinsically safe operation on energized conductors.

The power meters make over 75 total electrical measurements which are derived from the voltage and current inputs. Electrical load diagnostic parameters such as power factor and line frequency are captured in addition to energy and demand values.

The Siemens MD-3HD Model Power Meters require no external power and the power supplies can accommodate service voltages ranging from 80 to 600V (phase-to-phase). The simple installation is accomplished by connecting the color-coded voltage leads and clearly labeled CTs. A three-LED indicator display confirms proper CT-to-phase installation. The meters automatically adjust for CT orientation—greatly reducing set-up time and all but eliminating installation errors.

The display features an integrated 2 × 16-character backlit display which cycles through key configuration data along with voltage, current, power, and power factor, by phases.



MD-3HD DIN Rail Mount Enclosure



MD-3HD Wall Mount Enclosure

Features

- 3 channels: 3-phase submeter monitors voltage, current, power, energy, and many other electrical parameters on single or three-phase systems
- Two models available: DIN Rail Mount Enclosure or Wall Mount Enclosure
- Revenue grade. Third-party ANSI C12.20-2015 Class 0.2 certification
- Interval Data Recording: Store up to 63 days of 15-minute kWh data
- Continuous sampling; no blind cycles.
- Use with a full range of Siemens Split Core or Rogowski-style CTs, including several revenue-grade options
- Line-Powered: 90 to 600V Phase-to-Phase Power Supply
- Display shows real-time information about the meter configuration and metered data
- Communicate using either BACnet or Modbus protocol

Features (Continued)

- User-configurable alarm with isolated output
- Data updates occur every 1.0 seconds
- Patented PhaseChek™ technology confirms proper CT orientation

Siemens MD-3 HD Model Power Meters use interchangeable CT options such as split-core or flexible Rogowski-style CTs. The meters have embedded Rogowski Coil CT amplifier/integrator circuitry, so there is no need to provide external power to the CTs.

Communications interface to the meters is through an RS-485 serial connection using BACnet MS/TP (default) or Modbus RTU protocol. Advanced configuration can be completed by using ViewPoint™ software.

Specifications

Technical	Service types	Single Phase, Three Phase-Four Wire (WYE), Three Phase-Three Wire (Delta)
	Power	From L1 Phase to L2 Phase, 90 to 600 Vac RMS CAT III 50/60 Hz, 500 mA maximum
	AC Protection	0.5A internal fuse protection. 200 KA interrupt
	3 Voltage channels	80-346 Volts AC Line-to-Neutral, 600V Line-to-Line, CAT III
	3 Current channels	0.525 Vac max, 333 mV CTs, 0 to 4,000+ Amps, depending on current transducer
	Maximum current input	150% of current transducer rating (mv CTs) to maintain accuracy. Measure up to 4000 Amps with RoCoil CTs.
	Measurement rating	True RMS using high-speed digital signal processing (DSP)
	Line frequency	50/60 Hz
	Sampling	Continuous 1.8 kHz (no blind cycles)
	Parameter update rate	1.0 second
	Measurements	Volts, Amps, kW, kVAR, kVA, aPF, dPF, kW demand, kVA demand, Import (Received) kWh, Export (Delivered) kWh, Net kWh, Import (Received) kVAh, Export (Delivered) kVAh, Net kVAh, Import (Received) kVARh, Export (Delivered) kVARh, Net kVARh, THD, Theta, Frequency. All parameters for each phase and element total.
	Accuracy	0.2% ANSI C12.20-2015 Class 0.2 (3rd party certification pending)
	Resolution	32-bit floating point
	Display	2 × 16-character display with tri-color backlight

The MD-3 HD Model Power Meter has an integrated Ethernet port which supports BACnet IP or Modbus TCP in addition to the RS-485 communication options noted above. This model also provides a new backlit display.

Up to 20 meters can be connected to a single RS-485 network for monitoring and recording power usage at multiple locations within a single site.

Applications

- Tenant Submetering
- Bi-directional Metering
- Data Center monitoring
- Commercial
- Retail
- Industrial Power Reporting

Technical, Continued Communications	Hardware	RS-485 Serial and Ethernet
	Maximum communication length	1200 meters at 100K bits/second or less
	Communication rate (Baud)	Modbus: 9600, 19200, 38400, 57600, 76800, 115200 baud BACnet: 9600, 19200, 38400, 76800
	Data bits	8
	Parity	None, Even, Odd
	Stop bit	2,1
	Supported protocols	Modbus RTU, BACnet MS/TP, Modbus TCP or BACnet IP
Mechanical	Wire connections	12-28 AWG 600 Vac, Voltage connection must be #14 AWG or larger and 600 Vac rate
	Mounting	Wall mount enclosure or TS35/7.5 DIN Rail
	Operating temperature	-4° to 140°F (-20° to 60°C)
	Humidity	5% to 95% non-condensing
	Enclosure	ABS Plastic, 94-V0 flammability rating
	Weight (exclusive of CTs)	
	DIN Rail model (MD-3HD-R-D-N)	13 ounces (363 g)
	Wall Mount model (MD-3HD-R-D-N)	22 ounces (635 g)
	Enclosure Dimensions	
	DIN Rail model (MD-3HD-R-D-N)	(L) 7.51" x (W) 3.24" x (H) 1.48" (L) 19.08 cm x (W) 8.23 cm x (H) 3.76 cm
Wall Mount model (MD-3HD-C-D-N)	(L)10.12" x (W) 5.50" x (H) 2.12" (L) 25.70 cm x (W) 14.00 cm x (H) 5.37 cm	
Color	Black	
ViewPoint-HD™	Operating system	Windows® 10, Windows® 8, Windows® 7
	Communications	10/100 Ethernet and USB 2.0
	Web page security	2 levels of PIN protection (Read/Write or Read-Only)
Certifications	UL	Conforms to UL Std 61010-1, 3rd Edition & IEC 61010-2-030 1st Edition
	CE Conformity	LVD (EN61010-1), EMC (EN61326-1), RoHS 2 (EN IEC 63000:2018)
	ANSI C12.20 CLASS 0.2	NIST Traceable Calibration (3rd party certification pending)
		IEC 61010-2-030 cUL certified to CAN/CSA Standard C22.2 No. 61010-1 Certified to CSA Std. C22.2, No. 61010-1
	FCC Part 15, Class A	
	RoHS Compliant	
	WEEE Compliant	
	BACnet Testing Labs certified smart sensor (B-SS) device, Standard Grade only	
Country of Origin	USA	

NOTE: Contact your Siemens Representative to download the free ViewPoint-HD software.

Ordering Information

Part Number	Description
MD-3HD-C-D-N	3-Phase Sub Meter with Enclosure
MD-3HD-R-D-N	3-Phase Sub Meter for DIN Rail Mounting

Dimensions

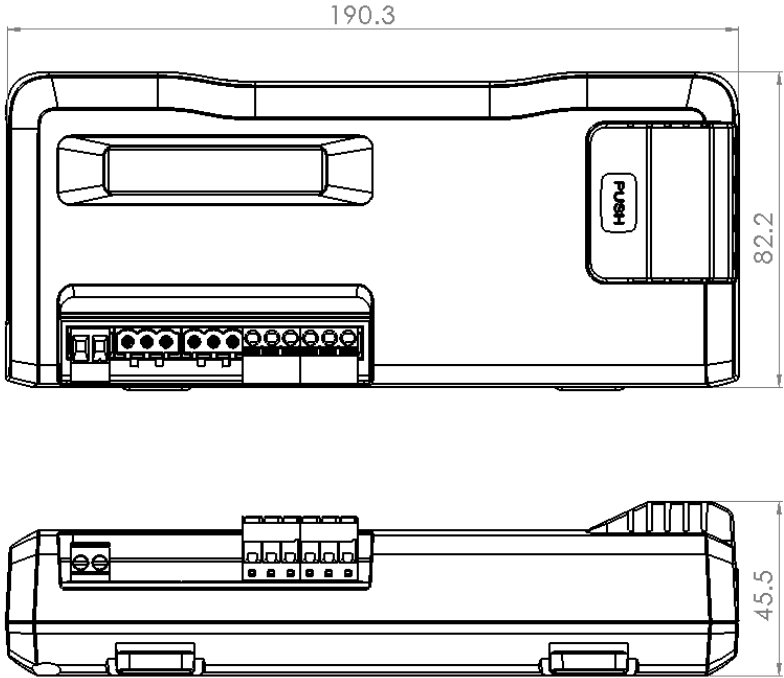


Figure 1. MD-3HD-R-D-N Dimensions in Millimeters.

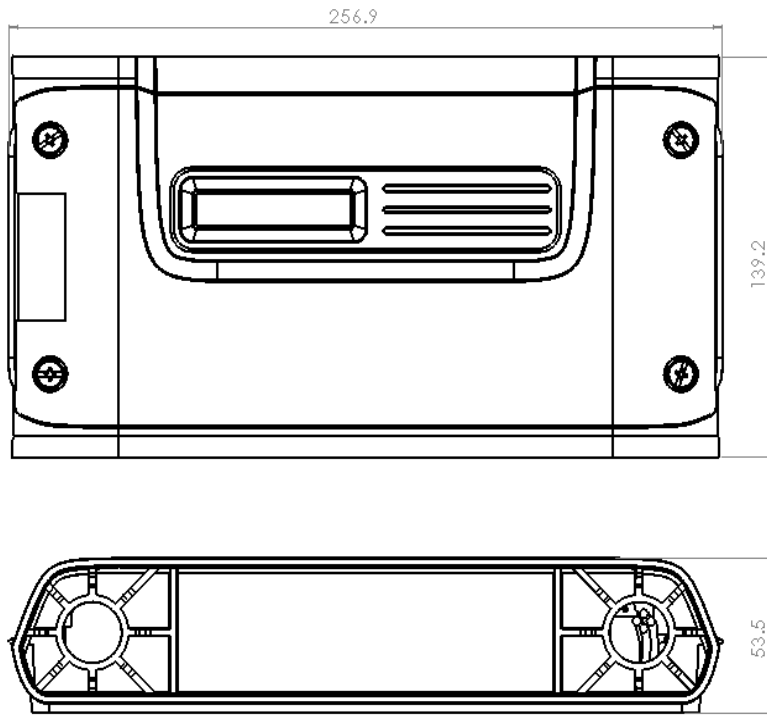


Figure 2. MD-3HD-C-D-N Dimensions in Millimeters.

BACnet Protocol Implementation Conformance Statement

Products

Product	Model Numbers	Protocol Revision
Siemens MD-3HD	MD-3HD-C-D-N MD-3HD-R-D-N	Revision 12

Vendor Information

<p>Siemens Industry, Inc. Building Technologies Division 1000 Deerfield Parkway Buffalo Grove, IL 60089 www.buildingtechnologies.siemens.com/bt/us</p>

Product Description

<p>Single-phase, three-phase ANSI C12.20-2010 Class 0.2 revenue grade power metering kits. Supports BACnet MS/TP and Modbus RTU Communication protocol (MD-BMS models). Supports BACnet MS/TP, Modbus RTU, BACnet IP and Modbus TCP protocols (MD-BMED models).</p>

BACnet Standardized Device Profile

Product	Device Profile
BACnet Energy Meter Kits with CTs	BACnet Smart Sensor (B-SS)

Supported BACnet Interoperability Building Block (BIBBs)

Product	BIBB	Name
Required for B-ASC Profile		
BACnet Energy Meter Kits with CTs	DS-RP-B	Data Sharing-ReadProperty-B
	DS-RPM-B	Data Sharing-ReadPropertyMultiple-B
	DS-WP-B	Data Sharing-WritePropteryMultiple-B
	DM-DOB-B	Device Management-Dynamic Object Binding-B (Who-Has)
	DM-DOB-B	Device Management-Dynamic Object Binding-B (I-Have)
	DM-DDB-B	Device Management-Dynamic Device Binding-B (Who-Is)
	DM-DDB-B	Device Management-Dynamic Device Binding-B (I-Am)

Standard Object Types Supported

Product	Object Type	Creatable	Deletable
BACnet Energy Meter Kits with CTs	Analog Value	No	No
	Device	No	No

Data Link Layer Options

Product	Data Link and Options
BACnet Energy Meter Kits with CTs	BACnet IP, (Annex J), Foreign Device (MD-BMED only)
	MS/TP master (Clause 9), baud rate(s): 9600 bps, 19200 bps, 38400 bps, 76800 bps

Segmentation Capability

Product	Segmentation Type	Supported	Window Size
BACnet Energy Meter Kits with CTs	Can transmit segmented messages	No	N/A
	Can receive segmented messages	No	N/A

Device Address Binding

Product	Static Device Binding Supported
BACnet Energy Meter Kits with CTs	No

Networking Options

Product	Network Options Supported	Supported
BACnet Energy Meter Kits with CTs	Router, Clause 6	No
	Annex H, BACnet Tunneling Router over IP	No
	BACnet/IP Broadcast Management Device (BBMD) Does the BMD support registrations by Foreign Devices?	No

Network Security Options

Product	Security Options Supported
BACnet Energy Meter Kits with CTs	Non-secure Device – is capable of operating without BACnet Network Security.

Character Sets

Product	Character Sets Supported
BACnet Energy Meter Kits with CTs	ISO 10646 (UTF-8)

Supported Services

Product	Application Service	Initiates Requests	Executes Requests
BACnet Energy Meter Kits with CTs	ReadProperty Service	No	Yes
	ReadPropertyMultiple Service	No	Yes
	WriteProperty Service	No	Yes
	Who-Is	No	Yes
	Who-Has	No	Yes
	I-Am	Yes	No
	I-Have	Yes	No

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