

Energy Meters

Simple System Integration with a Variety of Protocol Options Available



DESCRIPTION

The H81xx Series Energy Meters are easy to install and provide exceptional system accuracy, making them ideal for all submetering applications.

Each meter is factory-matched with one to three split-core CTs. The meter/CT pairs are system-calibrated to provide excellent total system accuracies of 1% from 2% to 100% of the amperage rating of the CTs (e.g., 2-100 amps with 100 amp CTs). Matching serial numbers assure that the meter and CT were calibrated together (matching does not apply if using 100A CTs).

The H81xx is easy to install. The split-core CTs eliminate the need to remove electrical conductors, reducing installation time. The meter is also capable of detecting and correcting phase reversal, eliminating the need for concern about CT load orientation. The convenient color coding of the CTs and voltage leads make correct connection simple.

APPLICATIONS

- Commercial tenant submetering
- Performance contracting
- Allocating costs
- Real-time power monitoring via local display or through control/data acquisition systems

SPECIFICATIONS



Inputs:

Voltage Input	
H8150	90-132VAC line-to-neutral
H8163	90-300VAC line-to-neutral

Accuracy:

System Accuracy	±1% of reading from 2% to 100% of the rated current of the CTs, accomplished by matching the CTs with electronics and calibrating them as a system
Sample Rate	1280 Hz

Outputs:

All Models	
LCD Display	1.2" x 3.8" (31 mm x 97 mm) viewing area, 160 segments, backlit with LCD
H8163 Only	
Pulse Output	Normally open, Opto-FET, 100mA@24VAC/DC
Pulse Rate	0.10*, 0.25**, 0.50, or 1.00kWh per pulse
Pulse Width	200 msec closed
Phase Loss Alarm	N.O. (opens on alarm), Opto-FET, 100 mA @ 24 VAC/DC; fixed threshold 25% below

Mechanical:

Protection Class	NEMA 1
-------------------------	--------

Environmental:

Operating Temperature Range	0° to 50°C (32° to 122°F)
Storage Temperature Range	-40° to 70°C (-40° to 158°F)
Humidity Range	0-95% noncondensing
Agency Approvals	UL61010

Approved for California CSI Solar applications (check the CSI website for model numbers).

*not supported at >1600A

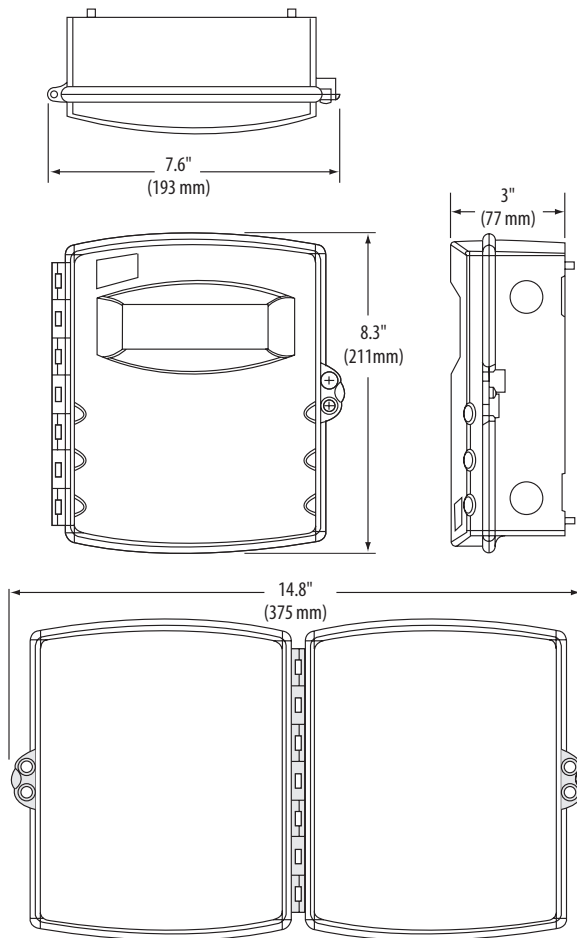
**not supported at >2400A

Note: Meter and CTs serial numbers must match, except for 100A CTs. Neutral voltage connection is required.

FEATURES

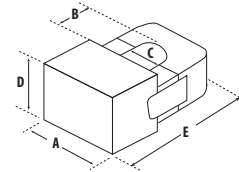
- Revenue Grade measurements
- High resolution backlit LCD display provides clear readings at a distance... reduces the risk of misinterpretation of the data. Back-lighting can be disabled if desired
- H8163 provides a pulse output from 1/10 to 1 pulse per kWh for easy connection to existing control or data acquisition systems
- Provides a phase-loss alarm...protects equipment (H8163)
- With the optional communications board (H81xx-CB), the H81xx can easily be added to a Modbus, BACnet or N2 control system network to report multiple variables including kW, kWh, kVAR, PF, Amps and Volts, providing crucial power information at a reduced installation cost

DIMENSIONAL DRAWINGS



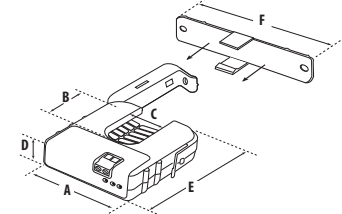
MICRO 100 Amp

A = 1.6"	(40 mm)
B = 0.7"	(16 mm)
C = 0.7"	(16 mm)
D = 1.2"	(29 mm)
E = 2.1"	(53 mm)



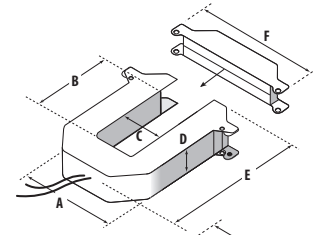
MINI 200 Amp

A = 2.6"	(66 mm)
B = 1.1"	(28 mm)
C = 0.8"	(19 mm)
D = 1"	(27 mm)
E = 2.9"	(74 mm)
F = 3.5"	(90 mm)



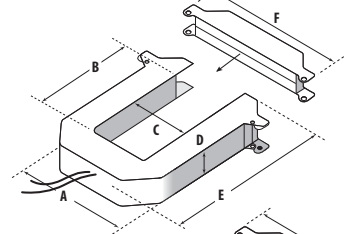
SMALL 300 Amp

A = 3.8"	(95 mm)
B = 1.5"	(38 mm)
C = 1.3"	(32 mm)
D = 1.1"	(29 mm)
E = 4.2"	(107 mm)
F = 4.8"	(121 mm)



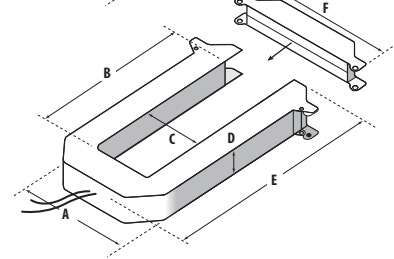
MEDIUM 400/800 Amp

A = 4.9"	(124 mm)
B = 2.9"	(73 mm)
C = 2.5"	(62 mm)
D = 1.1"	(29 mm)
E = 5.6"	(141 mm)
F = 5.9"	(150 mm)



LARGE 800/1600/2400 Amp

A = 4.9"	(124 mm)
B = 5.5"	(140 mm)
C = 2.5"	(62 mm)
D = 1.1"	(29 mm)
E = 8.1"	(207 mm)
F = 5.9"	(150 mm)



ORDERING INFORMATION



120VAC-240VAC (nom.)

AMPS	ONE CT	TWO CTs	THREE CTs	VOLTAGE	OUTPUT
100 Micro	H8150-0100-0-1	H8150-0100-0-2	H8150-0100-0-3	120VAC L-N	Display Only
200 Mini	H8150-0200-1-1	H8150-0200-1-2	H8150-0200-1-3		
300 Small	H8150-0300-2-1	H8150-0300-2-2	H8150-0300-2-3		
400 Med		H8150-0400-3-2	H8150-0400-3-3		
800 Med		H8150-0800-3-2	H8150-0800-3-3		
800 Lg			H8150-0800-4-3		
1600 Lg			H8150-01600-4-3		
2400 Lg			H8150-2400-4-3		

120VAC-480VAC (nom.) with Pulse and Phase Loss Outputs

AMPS	ONE CT	TWO CTs	THREE CTs	VOLTAGE	OUTPUT
100 Micro	H8163-0100-0-1	H8163-0100-0-2	H8163-0100-0-3	120-480VAC	Pulse & Phase Loss
200 Mini	H8163-0200-1-1	H8163-0200-1-2	H8163-0200-1-3		
300 Small	H8163-0300-2-1	H8163-0300-2-2	H8163-0300-2-3		
400 Med		H8163-0400-3-2	H8163-0400-3-3		
800 Med		H8163-0800-3-2	H8163-0800-3-3		
800 Lg			H8163-0800-4-3		
1600 Lg			H8163-01600-4-3		
2400 Lg			H8163-2400-4-3		

ACCESSORIES

Fuse and Fuseholders (AH02, AH03, AH04)
Comms board (H81xx-CB)
Modbus TCP Gateway (U013-0012)
BACnet IP Router (U013-0013)



AH04



H81xx-CB



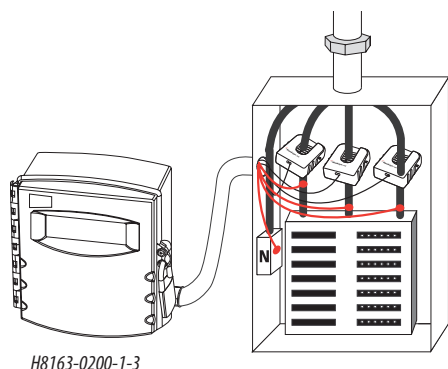
U013-0012



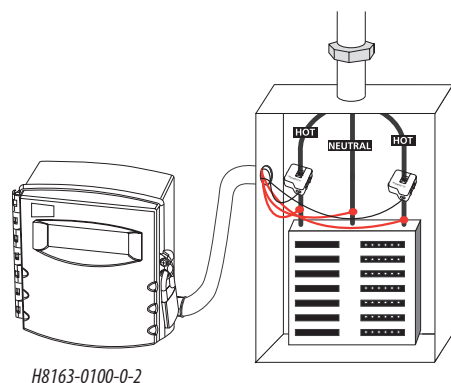
U013-0013

APPLICATION/WIRING EXAMPLES

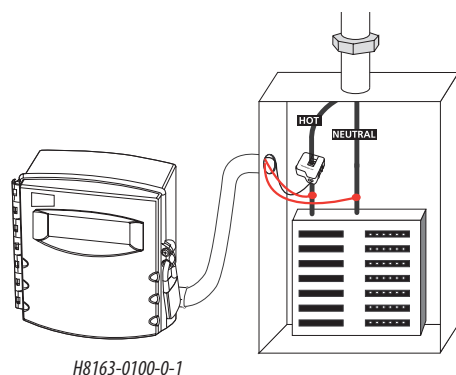
208/120VAC, 4-wire, 3Ø, 200 Amp Service



240VAC, 3-wire, Single Phase, 100 Amp Service



120VAC, 2-wire, Single Phase, 100 Amp Service



DATA OUTPUTS

kWh, Consumption
 kW, Real power
 kVAR, Reactive power
 kVA, Apparent power
 Power factor
 Voltage, line to line
 Voltage, line to neutral
 Amps, Average current
 kW, Real Power ØA
 kW, Real Power ØB
 kW, Real Power ØC
 Power factor ØA
 Power factor ØB
 Power factor ØC
 Voltage, ØA to ØB
 Voltage, ØB to ØC
 Voltage, ØA to ØC
 Voltage, ØA to Neutral
 Voltage, ØB to Neutral
 Voltage, ØC to Neutral
 Amps, Current ØA
 Amps, Current ØB
 Amps, Current ØC
 Demand kW and kVAR *
 Peak Demand *
 Time Stamp *

* with H8163-CB communications board installed