Energy Meters

Simple System Integration with a Variety of Protocol Options Available

H81xx

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

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

SPECIFICATIONS

5 Year Warranty

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:

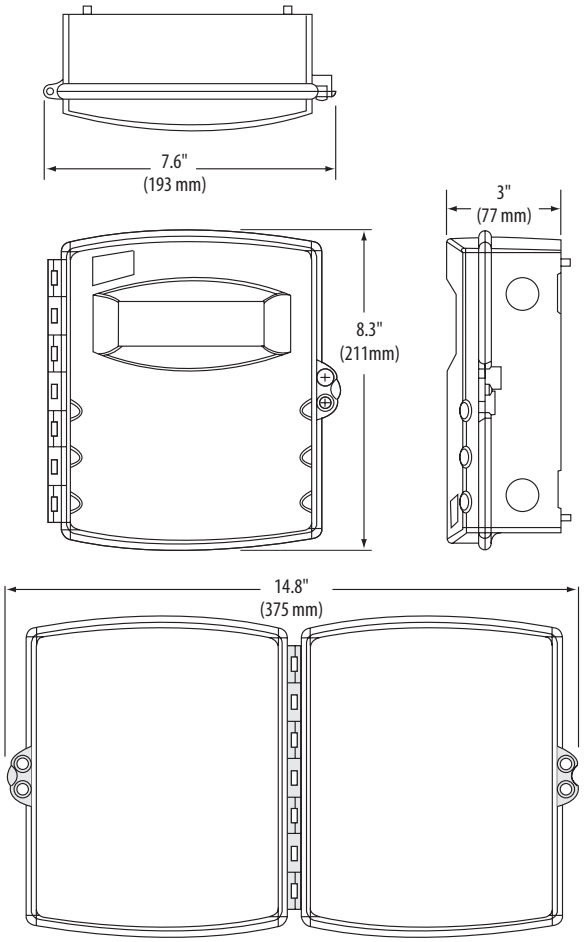
Protection Class	NEMA 1

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

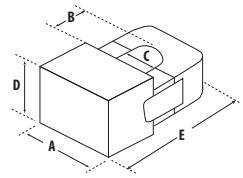
Approved for California CSI Solar applications (check the CSI website for model numbers).
**not supported at >1600A*
***not supported at >2400A*
Note: Meter and CTs serial numbers must match, except for 100A CTs. Neutral voltage connection is required.

DIMENSIONAL DRAWINGS



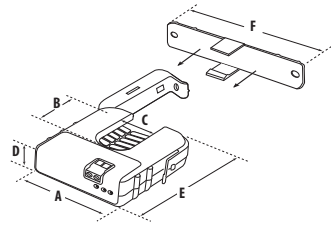
MICRO
100 Amp

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)



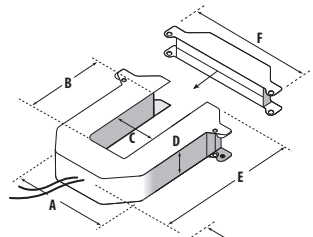
MINI
200 Amp

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)



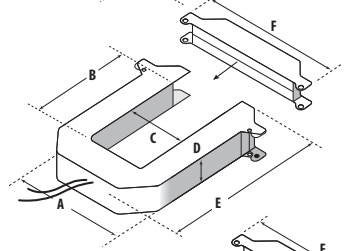
SMALL
300 Amp

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)



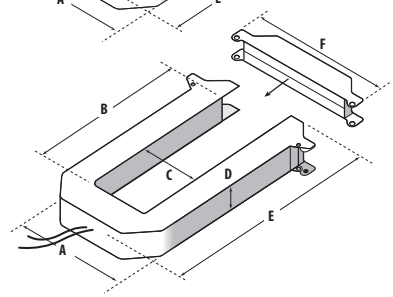
MEDIUM
400/800 Amp

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

c UL us LISTED

120VAC-240VAC (nom.)

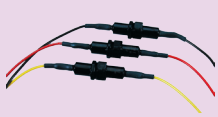
AMPS	ONE CT	TWO CTs	THREE CTs	VOLTAGE	OUTPUT
100 Micro	H8150-0100-0-1	H8150-0100-0-2	H8150-0100-0-3	120VAC L-N	Display Only
200 Mini	H8150-0200-1-1	H8150-0200-1-2	H8150-0200-1-3		
300 Small	H8150-0300-2-1	H8150-0300-2-2	H8150-0300-2-3		
400 Med		H8150-0400-3-2	H8150-0400-3-3		
800 Med		H8150-0800-3-2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

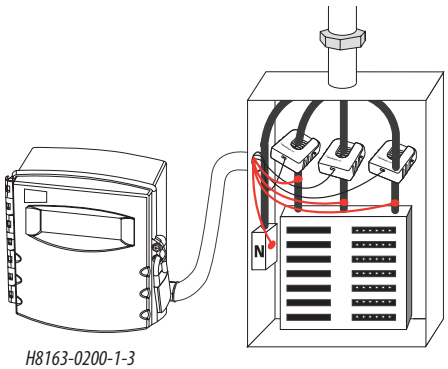

U013-0012


U013-0013

POWER/ENERGY MONITORING

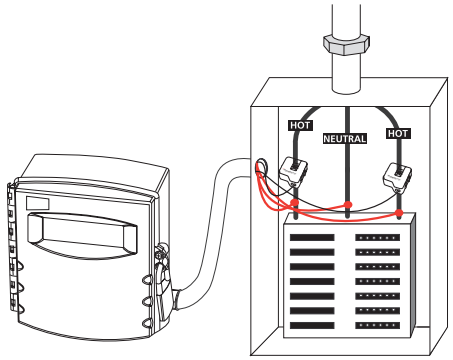
APPLICATION/WIRING EXAMPLES

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



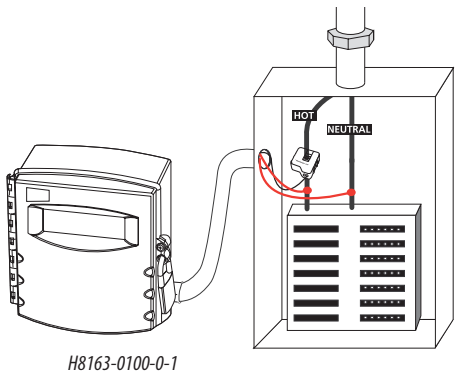
H8163-0200-1-3

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



H8163-0100-0-2

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



H8163-0100-0-1

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*