

Enhanced Power and Energy Meter



E5x Series



E50/E51



SPECIFICATIONS

Agency Approvals	UL508 (Open Type Device), EN61010-1, California CSI Solar, ANSI C12.20, Cat III, pollution degree 2
INPUTS	
Control Power, AC	50/60 Hz; 5VA max.; 90V min.; UL Maximums: 600V L-L (347V L-N); CE Maximum: 300V L-N
Control Power, DC	3W max.; UL and CE: 125 to 300VDC (external DC current limiting required)
Voltage Input	UL: 90V L-N to 600V L-L; CE: 90V L-N to 300V L-N
CURRENT INPUT	
Scaling	5A to 32,000A
Input Range	0 to 0.333V or 0 to 1V (selectable) CTs must be rated for use with Class 1 voltage inputs
Pulse Inputs <i>E5xHx & E50Fx only</i>	Contact inputs to pulse accumulators (one set with E5xH2 and E50F2; two sets with E5xH5 and E51F5)*
ACCURACY	
Real Power & Energy	0.2% (ANSI C12.20, IEC 62053-22 Class 0.2S)
OUTPUTS	
E50B1 & E5xCx	Real Energy Pulse: N.O. static**; Alarm contacts: N.C. static**
E50Bx	Reactive energy pulse 30VAC**
E5xCx	RS-485 2-wire Modbus RTU (1200 baud to 38.4 kbaud)
E5xHx	RS-485 2-wire BACnet MS/TP (9600 baud to 115.2 kbaud)
E50Fx	2-wire LON FT
MECHANICAL	
Mounting	DIN Rail or 3-point screw mount
ENVIRONMENTAL	
Altitude of Operation	3000 m
Operating Temp Range	-30° to 70°C (-22° to 158°F)
Storage Temp Range	-40° to 85°C (-40° to 185°F)
Humidity Range	<95% RH noncondensing; indoor use only

*10kΩ VAC/DC to 4-10VDC

**30VAC/DC, 100mA max. (AC: 50/60Hz)

DESCRIPTION

The **E5x Series** DIN Rail Meter combines exceptional performance and easy installation to deliver a cost-effective solution for power monitoring applications. The E5x can be installed on standard DIN rail or surface mounted as needed. The Modbus, LON, and BACnet output models offer added flexibility for system integration. The data logging capability (E5xC3 and E5xx5) protects data in the event of a communications or power failure elsewhere in the system. Combinations of serial communication, pulse output, and phase alarms are provided to suit a wide variety of applications. Additional pulse inputs on E5xHx and E50Fx provide an easy way to incorporate simple flow sensors to track gas, water, steam, or other energy forms using a BACnet or LON system.

The E51 models add a bi-directional monitoring feature designed expressly for renewable energy applications, allowing measurement of power imported from the utility grid as well as power exported from the renewable energy source (e.g. solar panels). In this way, a facility administrator can track all energy data, ensuring accuracy in billing and crediting. They are also useful for monitoring loads that use regenerative braking.

Versatile Energy Monitoring Solution

FEATURES

- Revenue Grade measurements
- High reliability with ANSI C12.20 0.2% accuracy, IEC 62053-22 Class 0.2S on E5xxx
- DIN rail or screw mounting options...easy installation
- Real energy output and phase loss alarm output on E50Bx and E5xCx models...one device serves multiple applications
- 90-600VAC...application versatility with fewer models to stock
- Data logging capability (E5xC3 and E5xx5)... ensures long term data retrieval and safeguards during power failures
- Compatible with CTs from 5A to 32000A...wide range of service types
- User-enabled password protection...protect from tampering
- System integration via Modbus (E5xCx), BACnet MS/TP (E5xHx), or Lonmark-certified LON FT (E50Fx)...convenient compatibility with existing systems
- Native BACnet MS/TP support (no gateway) with serial rates up to 115.2 kbaud (E5xHx)
- BTL-certified (E5xH2)
- E51 models: Bi-directional metering (4-quadrant), an essential solution for solar and other renewable energy applications, measures Import, Export and net energy transfer
- CSI approved...eases submission process for California Solar Initiative
- E51Cx includes SunSpec compliant common and meter register blocks

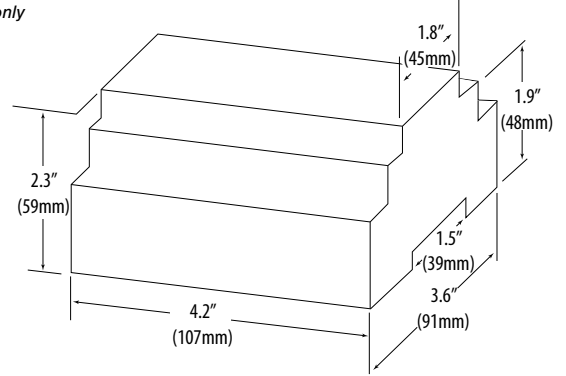
APPLICATIONS

- Energy monitoring in building automation systems
- Renewable energy
- Energy management
- Commercial submetering
- Industrial monitoring
- Cost allocation

ORDERING INFORMATION



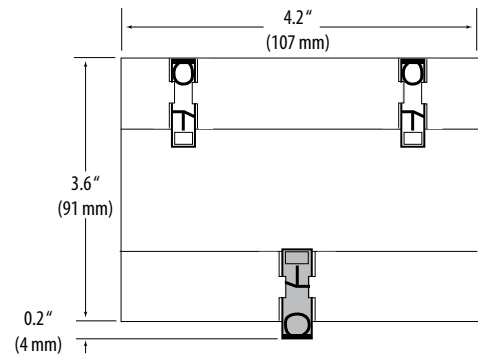
DIMENSIONAL DRAWINGS



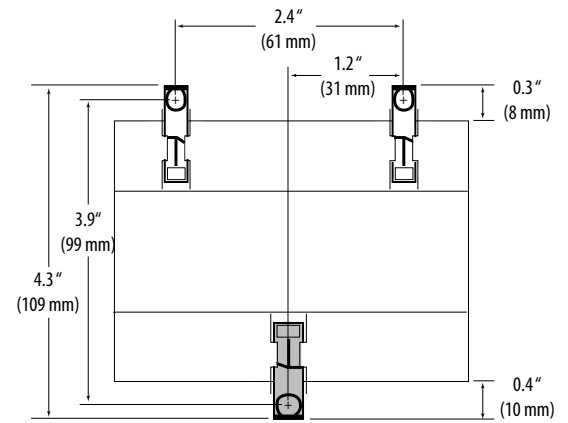
	E50B1	E50C2	E50C3	E50F2	E50F5	E50H2	E50H5	E51C2	E51C3	E51H2	E51H5
MEASUREMENT CAPABILITY - FULL DATA SET											
Bi-directional Energy Measurements								●	●	●	●
Power (3-phase total and per phase): Real (kW), Reactive (kVAR), and Apparent (kVA)	●	●	●	●	●	●	●	●	●	●	●
Power Factor: 3-phase average & per phase	●	●	●	●	●	●	●	●	●	●	●
Present Power Demand: Real (kW), Reactive (kVAR), and Apparent (kVA)	●	●	●	●	●	●	●	●	●	●	●
Import and Export totals of Present Power Demand: Real (kW), Reactive (kVAR), & Apparent (kVA)								●	●	●	●
Peak Power Demand: Real (kW), Reactive (kVAR), and Apparent (kVA)	●	●	●	●	●	●	●	●	●	●	●
Current (3-phase average and per phase)	●	●	●	●	●	●	●	●	●	●	●
Voltage: Line-Line and Line-Neutral (3-phase average and per phase)	●	●	●	●	●	●	●	●	●	●	●
Frequency	●	●	●	●	●	●	●	●	●	●	●
ANSI C12.20 0.2% accuracy, IEC 62053-22 Class 0.2S	●	●	●	●	●	●	●	●	●	●	●
Accumulated Net Energy: Real (kWh), Reactive (kVARh), and Apparent (kVAh)	●	●	●	●	●	●	●	●	●	●	●
Accumulated Real Energy by phase (kWh)	●	●	●	●	●	●	●	●	●	●	●
Import and Export Accumulators of Real and Apparent Energy								●	●	●	●
Reactive Energy Accumulators by Quadrant (3-phase total & per phase)								●	●	●	●
Demand Interval Configuration: Fixed or Rolling Block	●	●	●	●	●	●	●	●	●	●	●
Demand Interval Configuration: External Sync to Comms		●	●	●	●	●	●	●	●	●	●
DATA LOGGING											
Data Logging: 10 16-Bit Configurable (can include Date/Time) Data Buffers		●							●		
Data Logging: 3 Timestamped 32-Bit Configurable Data Buffers				●			●				●
Store up to 60 days of readings at 15-minute intervals		●		●		●		●			●
OUTPUTS											
Alarm Output (N.C.)	●	●	●	●		●		●	●	●	
1 Pulse Output (N.O.)		●	●					●	●		
2 Pulse Outputs (N.O.)	●										
RS-485 Serial (Modbus RTU Protocol)		●	●					●	●		
RS-485 Serial (BACnet MS/TP Protocol)						●	●			●	●
LON FT Serial (LonTalk Protocol)				●	●						
INPUTS											
2 Pulse Contact Accumulator Inputs				●		●					●
1 Pulse Contact Accumulator Input				●		●					●

MOUNTING DIAGRAMS

DIN Mount Configuration



Screw Mount Configuration



ACCESSORIES

NEMA4 enclosure (AE010) and locking mechanism (AE011)
 Fuse Kits with hi-interrupt capability AC Fuses (AH02, AH03, AH04)
 Split-core and solid-core CTs (H681x, E68xx)
 Replacement mounting clips (AE004)

DIN Rail (AV01), DIN Rail Stop Clips (AV02)
 Modbus TCP Gateway (U013-0012)
 BACnet IP Router (U013-0013 or U013-0015)
 Modbus to BACnet Converter (E8951)
 Network Display (H8932, H8936)

