

# CLASS 5000 Smart Meter

## Advanced kWh/Demand Meters with Communication

### Features

- Advanced 4-line display showing:
  - kWh
  - Power factor per phase
  - Amps per Phase
  - On-board set-up option for:
    - IP address
    - ID codes for EZ7, Modbus and BACnet
  - kW demand (with peak date & time)
  - Real-time load in kW
  - Volts per phase
- 0-2 volt output split-core current sensors allow for enhanced safety and accurate remote mounting of sensors up to 500 feet from meter without power interruption. (Optional solid-core sensors available.)
- Onboard installation diagnostics and verification system.
- Two pulse outputs and two external meter inputs (water, gas, BTU, etc.) (Channels 5 & 6, available via E-Mon Energy only)
- Phase loss alarm. (N.O. Contact)
- Built-in RS-485 communication capability supports the following connection configurations (or combinations not to exceed 52 devices per channel):
  - Up to 52 Din-Mon D2 & D5, Class 3200, 3400 and 5000 meters and/or IDR interval data recorders
 Cabling is daisy chain configuration, 3-cond., 18-22 AWG, up to 4,000 cable ft total per channel.
- Built-in RS-485 and Ethernet communication. Optional telephone modem available.
- Protocols
  - EZ7
  - Modbus RTU
  - Modbus TCP/IP
  - BACnet MS/TP\*
  - BACnet IP\*
  - LonWorks FT-10 (Twisted Pair)\*
- Records kWh and kVARh delivered, kWh and kVARh received in first four channels. Data stored in 15-min. for up to 72 days or 5-minute intervals for up to 24 days. Maintains data in a first-in, first-out format.
- Compatible with E-Mon Energy software via EZ7 protocol for automatic meter reading, energy billing and profiling.
- Meter is designed for use on both 3-phase, 3-wire (delta) and 3-phase, 4-wire (wye) circuits. Optional single-phase, 3-wire configuration available.
- Outdoor NEMA 4X polycarbonate enclosure (standard) with padlocking hasp & mounting flanges for indoor/outdoor installation (stand alone) with one 1 1/16" KO on bottom of enclosure.
- Optional industrial grade JIC steel enclosure with padlocking hasp and mounting flanges for indoor installation. Knockouts: 1 1/16" (3/4" cond.) bottom, 7/8" (1/2" cond.) top
- UL/CUL listed. Meets or exceeds ANSI C12.20 national accuracy standards. (+/- 0.2% from 1% to 100% of rated load)
- CE Mark approved.
- Meter meets or exceeds MID accuracy standards.
- BACnet protocol is BTL certified. LonWorks protocol is LonMark certified.
- MV-90 compatible (with EZ7 only.)



Dimensions: 6" H x 6" W x 4 1/4" D

### Model Numbers

#### 120/208-240V, 127/220V, 3-Phase

E50-208100-R01KIT (100 amp)  
 E50-208200-R01KIT (200 amp)  
 E50-208400-R01KIT (400 amp)  
 E50-208800-R01KIT (800 amp)  
 E50-2081600R01KIT (1600 amp)  
 E50-2083200R01KIT (3200 amp)

#### 220/380V, 230/400V, 240/415V, 3-Phase

E50-400100-R01KIT (100 amp)  
 E50-400200-R01KIT (200 amp)  
 E50-400400-R01KIT (400 amp)  
 E50-400800-R01KIT (800 amp)  
 E50-4001600R01KIT (1600 amp)  
 E50-4003200R01KIT (3200 amp)

#### 277/480V, 3-Phase

E50-480100-R01KIT (100 amp)  
 E50-480200-R01KIT (200 amp)  
 E50-480400-R01KIT (400 amp)  
 E50-480800-R01KIT (800 amp)  
 E50-4801600R01KIT (1600 amp)  
 E50-4803200R01KIT (3200 amp)

#### 347/600V, 3-Phase, 4 W (Wye Configuration)

E50-600100-R01KIT (100 amp)  
 E50-600200-R01KIT (200 amp)  
 E50-600400-R01KIT (400 amp)  
 E50-600800-R01KIT (800 amp)  
 E50-6001600R01KIT (1600 amp)  
 E50-6003200R01KIT (3200 amp)

### Enclosure Options

Meters supplied standard in NEMA 4X outdoor enclosures. Not available in MMU Configuration. To order a JIC Steel enclosure replace "R" in model number with "J" (E50-208100-J01KIT)

### Communication Protocol & Option Packages

The models above represent the 01 protocol package. To specify a different protocol package replace "01" in model number with the specification below.

RS-485 Port	Ethernet Port	Specify
EZ7	EZ7 Ethernet	01
Modbus RTU	EZ7 Ethernet	02
BACnet MS/TP	EZ7 Ethernet	03
EZ7	Modbus TCP/IP	04
EZ7	BACnet IP	05
Modbus RTU	Modbus TCP/IP	06
Lonworks FT-10	EZ7 Ethernet	07
Lonworks FT-10	Modbus TCP/IP	08
EZ7 w/Telephone Modem	EZ7 Ethernet	09
EZ7 w/Telephone Modem	Modbus TCP/IP	10
EZ7 w/Telephone Modem	BACnet IP	11

### Options

Three-phase meter kits are supplied with (3) split-core current sensors.

To order a single-phase, 3-wire meter kit add "-SP" before "KIT" in the model number. Ex. E50-208100-R01-SPKIT  
 Single-phase meters will be supplied with (2) split-core current sensors.

\*NOTE: Interval data not available via BACnet or LonWorks.

# CLASS 5000 Smart Meter ENGINEERING SPECIFICATIONS

### Class 5000 Smart Meter Specifications

Meter shall be fully electronic with 4 line LCD display showing:

- kWh
- Power factor per phase
- Amps per phase
- kW demand (with peak date and time)
- Real-time load in kW
- Volts per phase

Meter shall utilize 0-2 volt AC output current sensors to allow paralleling and/or mounting up to 500 feet from meter. Sensors shall be of split-core configuration to allow installation without disconnecting cabling, etc. Sensors shall be available from 100 amp to 3200 amp. Sensors shall be optionally available in solid-core configuration (100 & 200 amp.)

Meter shall provide current sensor installation diagnostics indicator, phase error indicator and phase angle diagnostics on display.

Meter shall be field programmable for meter date/time, IP address and ID code for communication options.

Meter shall be enclosed in a NEMA 4X polycarbonate enclosure (standard) with padlocking hasp & mounting flanges for indoor/outdoor installation (stand alone) with one 1 1/16" KO on bottom of enclosure. Optional heavy duty JIC steel enclosure available for indoor installation.

Meter shall be UL/CUL listed to latest applicable standards for safety.

Meter shall meet or exceed ANSI C12.20 accuracy standards.

Meter shall be CE Mark approved.

Meter shall meet or exceed MID accuracy standards.

Meter shall provide non-volatile memory to maintain reading during power outages.

Meter shall store interval data for kW and kVAR for up to 72 days in first-in first-out format. Interval data not available via BACnet or LonWorks.

Meter shall be optionally available in single-phase, 3-wire configuration.

Meter shall operate as slave device when used with Modbus or LonWorks options. Meter works as a master device on BACnet MS/TP.

Meter shall provide optional 5th & 6th channel for logging inputs from third-party metering devices (gas, water, BTU, etc.) Both channels provide interval data logging that can be read via E-Mon Energy software and Modbus.

Meter shall provide two (2) pulse outputs.

Meter shall be capable of daisy-chain connection using RS-485 communications in combinations of Din-Mon D2 & D5, Class 3200s, 3400s, 5000s, IDR-8s, IDR-16s not to exceed 52 devices. Cabling shall be through RJ-11 modular jack (4-conductor) or terminal block (3-conductor), 18-26 AWG, up to 4,000 cable feet total.

Meter shall be MV-90 compatible (With EZ7 Only)

Meter shall be available with the following communication protocol & option packages:

RS-485 Port		Specify
EZ7	EZ7 Ethernet	01
Modbus RTU	EZ7 Ethernet	02
BACnet MS/TP	EZ7 Ethernet	03
EZ7	Modbus TCP/IP	04
EZ7	BACnet IP	05
Modbus RTU	Modbus TCP/IP	06
Lonworks FT-10	EZ7 Ethernet	07
Lonworks FT-10	Modbus TCP/IP	08
EZ7 w/Telephone Modem	EZ7 Ethernet	09
EZ7 w/Telephone Modem	Modbus TCP/IP	10
EZ7 w/Telephone Modem	BACnet IP	11

BACnet protocol shall be BTL certified. LonWorks protocol shall be LonMark certified.