

CLASS 3400 Smart Meter

Advanced kWh/Demand Meters with Communication

E-Mon D-Mon

Energy Monitoring Products & Systems

Features

- Standard features Include advanced 4-line large display showing:
 - kWh
 - kW demand (with peak date & time)
 - Power factor per phase
 - Real-time load in kW
 - Amps per Phase
 - Volts per phase
- On-board set-up option for:
 - IP address
 - Meter date/time
 - Load Control Settings
 - ID codes for EZ7, Modbus and BACnet
- Optional expanded feature package provides additional features:
 - Load control option for load control/shedding
 - Two external meter inputs (water, gas, BTU, etc.) (stored in channels 5 & 6)
 - Two Pulse outputs (one kWh and one kVARh)
- 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.
- Built-in RS-485 communications 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 or 5000 meters and/or IDR interval data recorders

Cabling is daisy-chain configuration, 3-conductor, 18-22 AWG, up to 4,000 cable feet total per channel.
- Communications
 - Built-in communication
 - RS-485
 - Ethernet
 - Pulse output
 - Optional telephone modem
- Protocols
 - EZ7
 - Modbus RTU
 - Modbus TCP/IP
 - BACnet MS/TP*
 - BACnet IP*
 - LonWorks FT-10 (Twisted Pair)*
- Records kWh & kVARh delivered, kWh & kVARh received in first four channels. Data stored in 15-min. intervals for up to 72 days or 5-minute intervals for up to 24 days. Maintains interval data storage in a first-in, first-out format.
- Compatible with E-Mon Energy software via EZ7 protocol for automatic meter reading, billing & profiling of interval energy data.
- 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 w/padlocking hasp & mounting flanges for indoor installation with three 1 1/16" KO (3/4" conduit) on bottom of enclosure.
- UL/CUL listed. Meets or exceeds ANSI C12.20 national accuracy standards. (+/- 0.2% from 1% to 100% of rated load)
- Meter meets or exceeds MID accuracy standards.
- BACnet protocol is BTL certified. LonWorks protocol is LonMark certified.
- MV-90 compatible (with EZ7 only.)



Dim. 8" H x 6" W x 3 3/4" D

Model Numbers

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

E34-208100-R01KIT (100 amp)
E34-208200-R01KIT (200 amp)
E34-208400-R01KIT (400 amp)
E34-208800-R01KIT (800 amp)
E34-2081600R01KIT (1600 amp)
E34-2083200R01KIT (3200 amp)

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

E34-400100-R01KIT (100 amp)
E34-400200-R01KIT (200 amp)
E34-400400-R01KIT (400 amp)
E34-400800-R01KIT (800 amp)
E34-4001600R01KIT (1600 amp)
E34-4003200R01KIT (3200 amp)

277/480V, 3-Phase

E34-480100-R01KIT (100 amp)
E34-480200-R01KIT (200 amp)
E34-480400-R01KIT (400 amp)
E34-480800-R01KIT (800 amp)
E34-4801600R01KIT (1600 amp)
E34-4803200R01KIT (3200 amp)

347/600V, 3-Phase

E34-600100-R01KIT (100 amp)
E34-600200-R01KIT (200 amp)
E34-600400-R01KIT (400 amp)
E34-600800-R01KIT (800 amp)
E34-6001600R01KIT (1600 amp)
E34-6003200R01KIT (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" (E34-208100-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

Expanded Feature Package

To order meters with the expanded feature package add the specification "-X-" before the word KIT in the model number. (E34-208100-R05-X-KIT)

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. E34-208100-R01-SPKIT

To order a single-phase, 3-wire meter with expanded feature package add "XSP" before KIT in the model number. Ex. E34-208100-R01XSPKIT

Single-phase meters will be supplied with (2) split-core current sensors.

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

E-Mon

Energy Monitoring Products

(800) 334-3666 - www.emon.com

Effective Date: 6/3/2013

CLASS 3400 SMART METER ENGINEERING SPECIFICATIONS

E-Mon D-Mon

Energy Monitoring Products & Systems

Class 3400 Smart Meter Specifications

Meter shall be fully electronic with 4-line by 20-character backlit LCD display showing kwh, kW demand (with peak date and time), power factor per phase, real-time load in kW, Amps per phase and Volts per phase.

Meter shall utilize 0-2 volt AC output current sensors to allow paralleling and/or mounting up to 500 feet from the 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 be field programmable for meter date/time, IP address and ID code for communication option and optional load control settings.

Meter shall provide installation diagnostics on display.

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 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 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 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 available through terminal block (3-conductor), 18-22 AWG, up to 4,000 cable feet total.

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

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

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

E-Mon[®]
Energy Monitoring Products

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
 - Meter date/time
- 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 external meter inputs (water, gas, BTU, etc.) (Channels 5 & 6, available via E-Mon Energy only)
- Two pulse outputs
- 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.
- Communications
 - Built-in RS-485 and Ethernet
 - Telephone Modem (optional)
- 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

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.

Features

- Advanced 4-line display showing:
 - kWh delivered, received and Net kWh
 - kW demand (with peak date & time)
 - Power factor per phase
 - Real-time load in kW
 - Amps per Phase
 - Volts per phase
- On-board set-up option for:
 - IP address
 - Meter date/time
 - ID codes for EZ7, Modbus and BACnet
- 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 external meter inputs (water, gas, BTU, etc.) (Channels 5 & 6)
- 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.
- Communications
 - Built-in RS-485 and Ethernet
 - Telephone Modem (optional)
- 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.
- Green JIC Steel enclosure with padlocking hasp & mounting flanges for indoor installation with one 1 1/16" KO (3/4" cond.) on bottom of enclosure available
- Optional gray NEMA 4X polycarbonate enclosure available with padlocking hasp & mounting flanges for indoor/outdoor installation (stand alone) with one 1 1/16" KO on bottom of enclosure.
- 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: 7 1/4" H x 7" W x 3 1/4" D

Model Numbers

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

E50-208100-J01-N-KIT (100 amp)
E50-208200-J01-N-KIT (200 amp)
E50-208400-J01-N-KIT (400 amp)
E50-208800-J01-N-KIT (800 amp)
E50-2081600J01-N-KIT (1600 amp)
E50-2083200J01-N-KIT (3200 amp)

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

E50-400100-J01-N-KIT (100 amp)
E50-400200-J01-N-KIT (200 amp)
E50-400400-J01-N-KIT (400 amp)
E50-400800-J01-N-KIT (800 amp)
E50-4001600J01-N-KIT (1600 amp)
E50-4003200J01-N-KIT (3200 amp)

277/480V, 3-Phase

E50-480100-J01-N-KIT (100 amp)
E50-480200-J01-N-KIT (200 amp)
E50-480400-J01-N-KIT (400 amp)
E50-480800-J01-N-KIT (800 amp)
E50-4801600J01-N-KIT (1600 amp)
E50-4803200J01-N-KIT (3200 amp)

347/600V, 3-Phase

E50-600100-J01-N-KIT (100 amp)
E50-600200-J01-N-KIT (200 amp)
E50-600400-J01-N-KIT (400 amp)
E50-600800-J01-N-KIT (800 amp)
E50-6001600J01-N-KIT (1600 amp)
E50-6003200J01-N-KIT (3200 amp)

Enclosure Options

Meters supplied standard in Green JIC Steel enclosures. Not available in MMU Configuration. To order a Gray NEMA 4X outdoor enclosure replace "J" in model number with "R" (E50-208100-R01-N-KIT)

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		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 replace "-N-" with "NSP" in the model number. Ex. E50-208100-J02NSPKIT
Single-phase meters will be supplied with (2) split-core current sensors.

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

Green Class Net Smart Meter Specifications

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

- kWh delivered, received and net 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 the 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 green heavy duty JIC steel enclosure with padlocking hasp and mounting flanges for indoor installation. Optional gray NEMA 4X polycarbonate enclosure available with padlocking hasp & mounting flanges for indoor/outdoor installation (stand alone) with one 1 1/16" KO on bottom of enclosure.

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 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 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.

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

Din-Mon™ D2 Smart Meter

Advanced kWh/Demand Meters with Communication

E-Mon D-Mon

Energy Monitoring Products & Systems

Features

- Advanced 4-line display showing:
 - kWh
 - Power factor per phase
 - Amps per Phase
 - On-board set-up option for:
 - Meter date/time
 - ID codes for EZ7, Modbus and BACnet
 - kW demand (with peak date & time)
 - Real-time load in kW
 - Volts per phase
- Meter provides bidirectional meter data via communication protocols for net metering applications:
 - kWh & kVARh delivered
 - kWh & kVARh received
- 0.333 volt output split-core current sensors (standard) allow for enhanced safety and accurate remote mounting of sensors up to 500 feet from meter. (Optional solid-core sensors and 100mA output current sensors available.)
- Meters can be ordered without current sensors and used with commercially available 0.333V & 100mA output current sensors. (Specify V3 (0.333V) or C1(100mA) in model number and order without current sensors when using third-party current sensors).
- Two customer configurable pulse outputs:
 - Watt-hour and VAR-hour pulse outputs or
 - Watt-hour and phase loss (N.O. Contact)
- Onboard installation diagnostics and verification system.
- 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, Din-Mon D5, Class 3200, 3400 and 5000 meters and/or IDR interval data recorders
 - Cabling using 3-conductor, 18-22 AWG, up to 4,000 cable feet total.
- RS-485 Protocol Options
 - E-Mon Energy EZ7
 - Modbus RTU
 - BACnet MS/TP* (BTL Testing Certified)
- Records kWh and kVARh delivered, kWh and kVARh received in first four channels. Data stored in 15-minute intervals for up to 72 days or 5-minute intervals for up to 24 days. Maintains data in a first-in, first-out format. (Interval data not available via BACnet.)
- 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 1- and 2-element configuration available.
- Non-metallic enclosure with DIN rail mounting and surface mounting flexibility.
- UL/CUL Listed. Meter meets or exceeds ANSI C12.20 national accuracy standards. (+/- 0.2% from 1% to 100% of rated load.)
- Meter meets or exceeds MID accuracy standards.



Dimensions: 5.5" H x 4.3" W x 2.3" D

Model Numbers

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

E-D2-208100-SEZ7SPL3-V3KIT3 (100 amp)
E-D2-208200-SEZ7SPL3-V3KIT3 (200 amp)
E-D2-208400-SEZ7SPL3-V3KIT3 (400 amp)
E-D2-208800-SEZ7SPL3-V3KIT3 (800 amp)

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

E-D2-400100-SEZ7SPL3-V3KIT3 (100 amp)
E-D2-400200-SEZ7SPL3-V3KIT3 (200 amp)
E-D2-400400-SEZ7SPL3-V3KIT3 (400 amp)
E-D2-400800-SEZ7SPL3-V3KIT3 (800 amp)

277/480V, 3-Phase

E-D2-480100-SEZ7SPL3-V3KIT3 (100 amp)
E-D2-480200-SEZ7SPL3-V3KIT3 (200 amp)
E-D2-480400-SEZ7SPL3-V3KIT3 (400 amp)
E-D2-480800-SEZ7SPL3-V3KIT3 (800 amp)

347/600V, 3-Phase

E-D2-600100-SEZ7SPL3-V3KIT3 (100 amp)
E-D2-600200-SEZ7SPL3-V3KIT3 (200 amp)
E-D2-600400-SEZ7SPL3-V3KIT3 (400 amp)
E-D2-600800-SEZ7SPL3-V3KIT3 (800 amp)

RS-485 Communication Protocols

Above models supplied with EZ7 communication protocol for use with E-Mon Energy software.

Optional communication protocols:

- Modbus RTU - Replace **EZ7** in model with "RTU"
Ex. E-D2-480100SRTUSPL1-V3KIT1

- BACnet MS/TP - Replace **EZ7** in model with "BAC"
Ex. E-D2-208200SBACSP3-V3KIT3

*NOTE: Interval data not available via BACnet.

NOTE: All standard 3-phase meter kits include one set of three 0.333V split-core current sensors.

Ordering Options

- Solid Core current sensors - Replace "SPL" in model with "SCS" (100A & 200A only)
Ex. E-D2-480400-SEZ7SCS3-V3KIT3

- 100mA current sensors instead of 0.333V sensors - replace "V3" in model with "C1" (200A, 400A and 800A only)
Ex. E-D2-480200-SEZ7SPL3-C1KIT3

- Single Element meter - Replace "SPL3" or "SCS3" with "SPL1" or "SCS1" AND change "KIT3" to "KIT1"
Ex. E-D2-208100-SEZ7SPL1-V3KIT1

- 2-Element meter - Replace "SPL3" or "SCS3" with "SPL2" or "SCS2" AND change "KIT3" to "KIT2" Ex. E-D2-208100-SEZ7SPL2-KIT2

To order meters without current sensors remove KIT1, KIT2 or KIT3 from the model.
NOTE: Be sure to specify if the meter is single element, 2-element or 3-phase and what type of sensors will be used (0.333V or 100mA) when ordering without sensors.

Din-Mon Smart Meter Specifications

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

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

Meter shall utilize 0.333 volt AC output current sensors and allow remote mounting up to 500 feet from meter. Up to 3 sets of 0.333V sensors can be paralleled for cumulative reading. Sensors shall be of split-core configuration to allow installation without disconnecting cabling, etc. Sensors shall be available from 100A to 800A. Current sensors shall be optionally available in 100mA output (200A, 400A & 800A) and/or solid-core configuration (100A & 200A.)

Meter shall be available without current sensors for use with commercially available 0.333V and 100mA current sensors. (Specify configuration and sensor type when ordering.)

Meter shall provide a RS-485 communication for interface to BAS systems. (Specify protocol when ordering.)

Meter shall provide current sensor installation diagnostics indicator.

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

Meter shall be enclosed in a non-metallic enclosure with DIN rail mounting and surface mounting flexibility. Dimensions: 5.5" H x 4.3" W x 2.3" D

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

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

Meter shall meet or exceed MID accuracy standards.

BACnet protocol shall be BTL Certified.

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 stored in BACnet units.

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

Meter shall be capable of connecting using RS-485 communication in combinations of Din-Mon D2, Din-Mon D5, Class 3200s, 3400s, 5000s and IDRs not to exceed 52 devices. Cabling shall be through terminal block (3-conductor), 18-22 AWG, up to 4,000 cable feet total.

Meter shall be available with E-Mon Energy EZ7, Modbus RTU or BACnet MS/TP communication.

Meter shall provide two customer configurable pulse outputs:

- Watt-hour and VAR-hour pulse outputs or
- Watt-hour and phase loss (N.O. Contact)

Meter shall provide bidirectional meter data via communication protocols for net metering applications:

- kWh & kVARh delivered
- kWh & kVARh received

Din-Mon™ D5 Smart Meter

Advanced kWh/Demand Meters with Dual Protocol Communication

E-Mon D-Mon

Energy Monitoring Products & Systems

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
- Meter provides bidirectional meter data via communication protocols for net metering applications:
 - kWh & kVARh delivered
 - kWh & kVARh received
- 0.333 volt output split-core current sensors (standard) allow for enhanced safety and accurate remote mounting of sensors up to 500 feet from meter. (Optional solid-core sensors and 100mA output current sensors available.)
- Meters can be ordered without current sensors and used with commercially available 0.333V and 100mA output current sensors. (Specify V3 (0.333V) or C1 (100mA) in model number and order without current sensors when using third-party current sensors).
- Two customer configurable pulse outputs:
 - Watt-hour and VAR-hour pulse outputs or
 - Watt-hour and phase loss (N.O. Contact)
- Onboard installation diagnostics and verification system.
- 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, Din-Mon D5, Class 3200, 3400 and 5000 meters and/or IDR interval data recorders
 - Cabling using 3-conductor, 18-22 AWG, up to 4,000 cable feet total.
- Protocols (BACnet protocols are BTL Certified)
 - 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-minute intervals for up to 72 days or 5-minute intervals for up to 24 days. Maintains data in a first-in, first-out format. (Interval data not available via BACnet.)
- 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 1- and 2-element available.
- Non-metallic enclosure with DIN rail mounting & surface mounting flexibility.
- UL/CUL Listed. Meter meets or exceeds ANSI C12.20 national accuracy standards. (+/- 0.2% from 1% to 100% of rated load.)
- Meter meets or exceeds MID accuracy standards.
- LonMark Certified.



Dimensions: 5.5" H x 4.3" W x 2.3" D

Model Numbers

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

E-D5-208100-S01SPL3-V3KIT3 (100 amp)
 E-D5-208200-S01SPL3-V3KIT3 (200 amp)
 E-D5-208400-S01SPL3-V3KIT3 (400 amp)
 E-D5-208800-S01SPL3-V3KIT3 (800 amp)

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

E-D5-400100-S01SPL3-V3KIT3 (100 amp)
 E-D5-400200-S01SPL3-V3KIT3 (200 amp)
 E-D5-400400-S01SPL3-V3KIT3 (400 amp)
 E-D5-400800-S01SPL3-V3KIT3 (800 amp)

277/480V, 3-Phase

E-D5-480100-S01SPL3-V3KIT3 (100 amp)
 E-D5-480200-S01SPL3-V3KIT3 (200 amp)
 E-D5-480400-S01SPL3-V3KIT3 (400 amp)
 E-D5-480800-S01SPL3-V3KIT3 (800 amp)

347/600V, 3-Phase

E-D5-600100-S01SPL3-V3KIT3 (100 amp)
 E-D5-600200-S01SPL3-V3KIT3 (200 amp)
 E-D5-600400-S01SPL3-V3KIT3 (400 amp)
 E-D5-600800-S01SPL3-V3KIT3 (800 amp)

Communication Protocol & Option Packages

The models above represent the 01 protocol package. To specify a different protocol package replace "01" in the 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
EZ7	Lonworks FT-10	12

*NOTE: Interval data not available via BACnet.

NOTE: All standard meter kits include one set of three 0.333V split-core current sensors.

Ordering options

- Solid Core current sensors - Replace "SPL" in model with "SCS" (100A & 200A only)
 Ex. E-D5-480400-S04SCS3-V3KIT3

- 100mA current sensors instead of 0.333V sensors - replace "V3" in model number with "C1" (200A, 400A and 800A only)
 Ex. E-D5-480200-S02SPL3-C1KIT3

- Single Element meter - Replace "SPL3" or "SCS3" with "SPL1" or "SCS1" AND change "KIT3" to "KIT1"
 Ex. E-D5-208200-S01SPL1-C1KIT1

- 2-Element meter - Replace "SPL3" or "SCS3" with "SPL2" or "SCS2" AND change "KIT3" to "KIT2"
 Ex. E-D5-208200-S01SPL2-C1KIT2

- To order meters without current sensors remove KIT1, KIT2 or KIT3 from the model.
 NOTE: Be sure to specify if the meter is single element, 2-element or 3-phase and what type of sensors will be used (0.333V or 100mA) when ordering without current sensors.

Din-Mon™ D5 Smart Meter

ENGINEERING SPECIFICATIONS

Din-Mon Advanced Smart Meter Specifications

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

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

Meter shall utilize 0.333 volt AC output current sensors and allow remote mounting up to 500 feet from the meter. Up to 3 sets of 0.333V sensors can be paralleled for cumulative reading. Sensors shall be of split-core configuration to allow installation without disconnecting cabling, etc. Sensors shall be available from 100A to 800A. Current sensors shall be optionally available in 100mA output (200A, 400A & 800A) and/or solid-core configuration (100A & 200A.)

Meter shall be available without current sensors for use with commercially available 0.333V and 100mA current sensors. (Specify configuration and sensor type when ordering.)

Meter shall provide dual-protocol functionality to allow operation for RS-485/Ethernet or RS-485/LonWorks communication simultaneously with selectable BAS protocols. Meter shall support independent communication to E-Mon's AMR system, Building Automation System (BAS) or other front end monitoring system.

Meter shall provide current sensor installation diagnostics indicator.

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

Meter shall be enclosed in a non-metallic enclosure with DIN rail mounting and surface mounting flexibility. Dimensions: 5.5" H x 4.3" W x 2.3" D

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

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

Meter shall meet or exceed MID accuracy standards.

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

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.

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 be capable of connecting using RS-485 communication in combinations of Din-Mon D2, Din-Mon D5, Class 3200s, 3400s, 5000s and IDRs not to exceed 52 devices. Cabling shall be through terminal block (3-conductor), 18-22 AWG, up to 4,000 cable feet total.

Meter shall provide two customer configurable pulse outputs:

- Watt-hour and VAR-hour pulse outputs or
- Watt-hour and phase loss (N.O. Contact)

Meter shall provide bidirectional meter data via communication protocols for net metering applications:

- kWh & kVARh delivered
- kWh & kVARh received

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

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
EZ7	Lonworks FT-10	12