ECM-1240 Specifications

Current Transformer and Pulse Inputs

CH1 and CH2

- Requires “Type A” CTs with voltage output signal. “Type B” CTs with current output otherwisCTs with current output may be used provided that an appropriate burden resistor is installed.
- 333mV Full Scale “Single/COM” Terminals, Input Z = 20Kohm
- 666mV Full Scale “Dual/COM” Terminals, Input Z = 40Kohm

AUX1 to AUX4

- Requires CTs with current output
- 56.56mA Full Scale, Input Z = 20 ohm
- 1mA = 1.525 A

AUX5

- Multi-purpose input
- Power Monitoring Mode (performs the same as AUX1 to AUX4)
- Requires a 20 ohm 1% resistor (supplied) across the COM and AUX5 terminals
- 56.56mA Full Scale, Input Z = 20 ohm
- Pulse Counting Mode:
- Absolute MAX pulse count = 14pps @ 50 duty cycle (Jul 2010)

Communication

RS-232

- 19,200 baud 8N1
- 115,200 is used for firmware upgrades

Wireless (optional)

- Uses ZigBee protocol on a mesh network
- Setup as a ZigBee “router” device
- Default settings:
- PAN ID: “345” (may be changed by user)
- Node ID: “E3”
- Baud Rate: 19,200
- Frequency: 2.4 GHz
- Antenna: Wire Whip
- Optional Antenna: 2.1dBi external swivel antenna with RPSMA connector
- Not WiFi compatible!

Data Transfer

- Command control of real-time data ON or OFF
- Data packets are sent via the RS-232 port* at a pre-configured interval set by the user.
- Interval Options:
    - Binary Packet Mode (default): 1 to 255 seconds
    - ASCII Packet Mode: 2 to 255 seconds
    - HTTP Mode: 15 to 255 seconds
- Data packets may be sent immediately upon detection of a power transition greater than a pre-configured value set by the user. This applies to the Binary and ASCII modes only.
- Power Trigger Selection Range: 1 to 32,000 Watts. ***Note:*** *It is recommended to disable this function by setting the "Packet Trigger" value to 16,000.*

POWER MEASUREMENT

CH1 and CH2

- Measures "True" power based on sampling of the voltage and current measurements
- Resolution: 1 Watt
- Accuracy: typically 1% plus CT and PT accuracy
- 333mV Full Scale "Single/COM" Terminals, Input Z = 20Kohm
- 666mV Full Scale "Dual/COM" Terminals, Input Z = 40Kohm

AUX1 to AUX4

- Requires CTs with current output
- 56.56mA Full Scale, Input Z = 20 ohm
- 1mA = 1.525 A
- The kilowatt-hour value is based on the sampled TRUE Power.
- **Accuracy:** Equivalent to the power accuracy.

VOLTAGE MEASUREMENT

- Derived from the "mean" of all samples over one second.
- The supplied wall transformer must NOT be connected to voltages greater than 130V. See manual for monitoring loads connected to voltages greater than 120V.

Accuracy: Typically ± 1% ± 2 LSD plus PT accuracy.

CURRENT MEASUREMENT

- Derived from the "mean" of all samples over one second. (Mean value not RMS)
- **Accuracy:** Typically ± 1% ± 2 LSD plus CT accuracy.

Supply Power / Potential Transformer

- **Jack Type:** 3.5mm Mono Phone Jack
- **USE ONLY WITH SUPPLIED WALL TRANSFORMER**. If operated with a wall transformer other than the supplied type, a reading error and improper current drain will occur.
- The ECM-1240 is calibrated for use with the supplied wall transformer.

Load Phase

- Referenced to the wall transformer phasing.

Firmware

- Flash re-programmable by end user. Updates available at www.brultech.com

ZIGBEE Wireless Communication Option

Contains FCC ID: OUR-XBEE

The enclosed device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(i.) this device may not cause harmful interference and
(ii.) this device must accept any interference received, including interference that may cause undesired operation.

WARNING: To satisfy FCC RF exposure requirements for mobile transmitting devices, a separation distance of 20 cm or more should be maintained between the antenna of this device and persons during device operation. To ensure compliance, operations at closer than this distance is not recommended. The antenna used for this transmitter must not be co-located in conjunction with any other antenna or transmitter.

Wireless Module

IEEE 802.15.4 Standard

Frequency:	ISM 2.4 GHz Band
Output Power:	1 mW (0 dBm)
Receiver Sensitivity:	-92 dBm
Range:	Line of Sight: 300 Ft Indoors: Approximately 80Ft depending on wall material and density.
Protocol:	Zigbee
Network Type:	Mesh Network
Node Identifier (NI):	**E1** for ECM-1240 **C1** for Etherbee **R1** for additional dongles or routers
Personal Area Network ID:	13,106 (decimal)
Communication Speed:	19,200 baud