

SmartMon Energy Plus



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Power and Energy Monitor HS-EXPM



The SmartMon Energy Plus is a Power and Energy Monitor that provides a variety of advanced features, including:

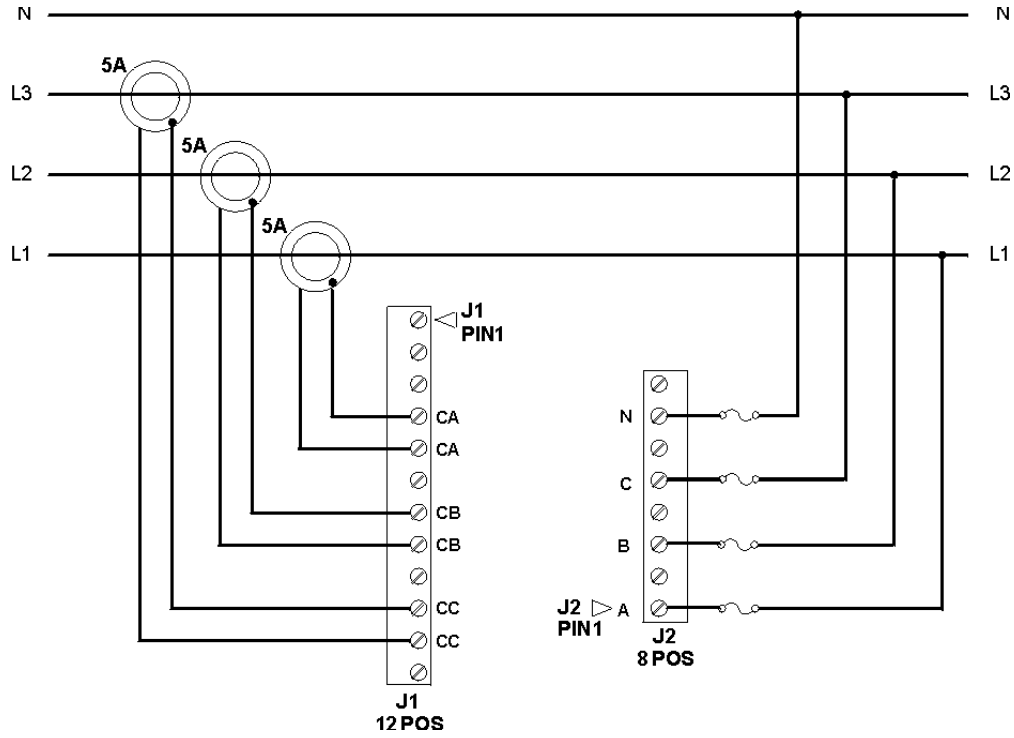
- 3-phase Power Monitoring with three current (0-5A CTs) and voltage inputs (480V, direct connect or PTs)
- Display of Energy and Power Values on a 5.7", TFT Color Display
- Historical Datalogging to Removable Media, up to 2GB stored locally
- Remote Access to Live Data (web server, Modbus, Modbus/TCP) and Historical Data (FTP)

1 SPECIFICATIONS

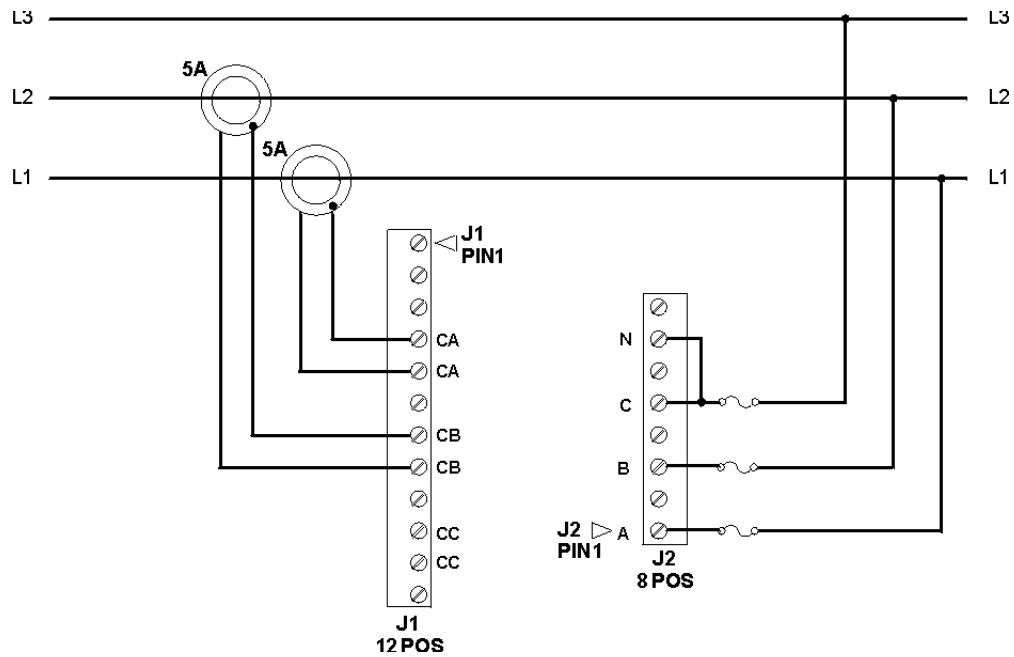
| CURRENT INPUTS | | VOLTAGE INPUTS | |
|--------------------------|---------------------------------------|--------------------------|---------------------------|
| Conversion | True RMS 78.1K cycles/sec | Conversion | True RMS |
| CT Input | 5A Secondary | PT Input (or direct) | 480V Secondary |
| Burden | 0.2VA | Burden | 2.0Mohm |
| Range | 1 to 150% of CT Primary | Input Range | 40 to 600Vac |
| Full Scale | 150% of CT Primary | Full Scale | 600Vac |
| Accuracy | <1% of Full Scale | Accuracy | Better than 1% full scale |
| RELAY OUTPUT (Form C) | | | |
| Current | 1A max at 30Vdc 0.5A max at 125Vac | Contact Voltage | 30Vdc, Max 125Vac, Max |
| MEASURED DATA VALUES | | | |
| Phase A RMS voltage (Va) | | Watts (W) | |
| Phase B RMS voltage (Vb) | | Power Factor (PF) | |
| Phase C RMS voltage (Vc) | | Volt-Amps (VA) | |
| Phase A RMS current (Ia) | | Volt-Amps Reactive (VAR) | |
| Phase B RMS current (Ib) | | Kilowatt Hour (KWhr) | |
| Phase C RMS current (Ic) | | Voltage Peak (Vpeak) | |
| Frequency (Hz) | | Current Peak (Ipeak) | |

| GENERAL SPECIFICATIONS | |
|-------------------------------|---|
| Required Power (Steady State) | 500mA @ 24 VDC |
| Required Power (Inrush) | 30A for 1 ms @ 24 VDC (DC switched) 2.5A for 4 mS @ 24 VDC (AC Switched) |
| Primary Power Range | 10-30VDC |
| Clock Accuracy | +/-35ppm Max at 35C (+/-1.53 minutes/month) |
| Operating Temperature | -10 to +60 C |
| Relative Humidity | 5 to 95%, Non-condensing |
| CONNECTIVITY | |
| Serial Ports | RS-232/RS-485 Modbus Slave (MJ2) |
| Ethernet Port | Modbus/TCP Slave |
| CAN Port | Horner CsCAN Peer-to-Peer |
| USB Ports | A & mini-B (not active) |
| Removable Media | microSD, 2GB |

2 WIRING

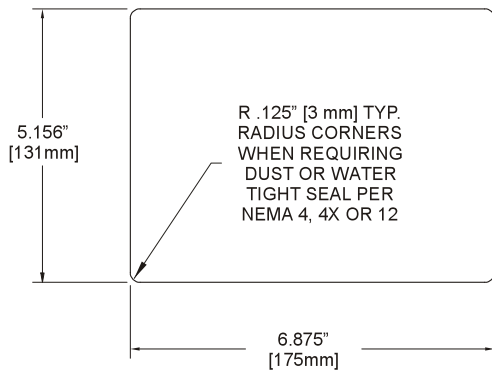
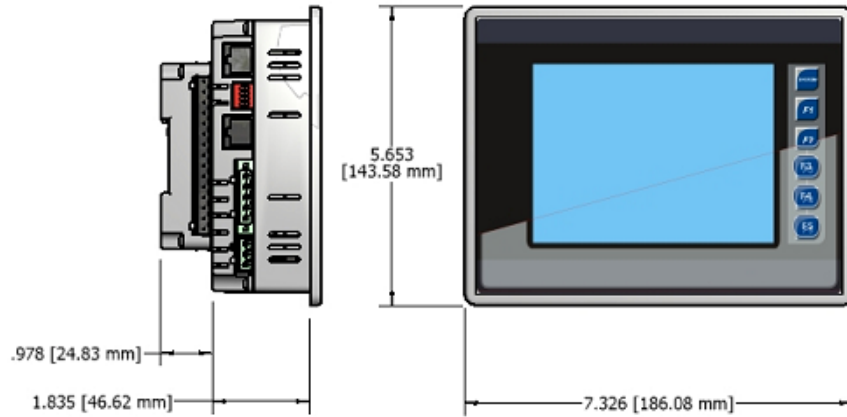


4-wire Wye or 4-wire Delta

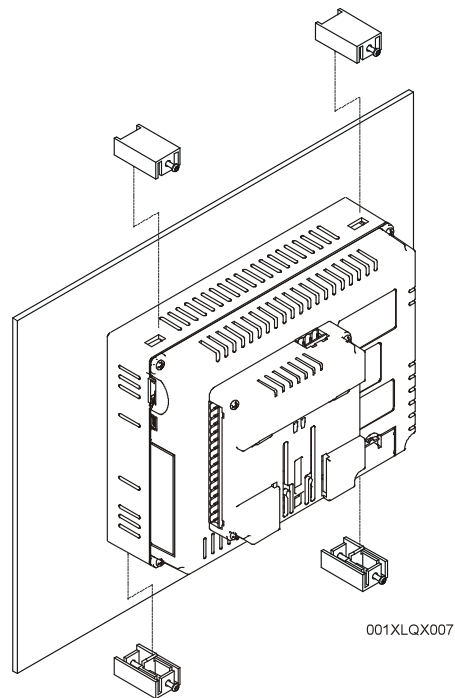


3-wire Delta

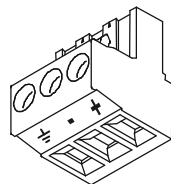
3 DIMENSIONS, CUTOUT, AND INSTALLATION



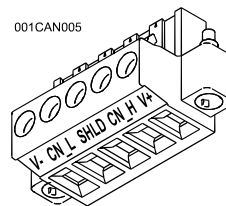
001OCS003-R1



001XLQX007



DC Power Connector (10-30Vdc)

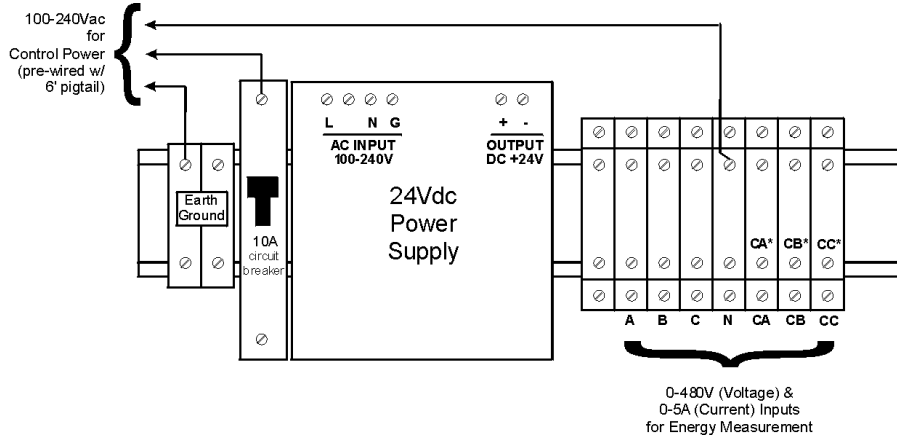


CsCAN Connector
(no power required)

4 PRE-WIRED PANEL OPTION

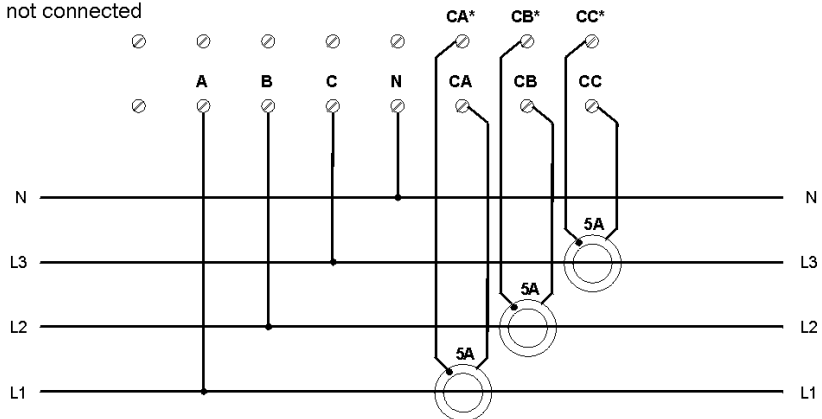
The SmartMon Energy Plus may be ordered pre-installed in a small control panel. This control panel includes a 10A AC Circuit Breaker and a 24W 24Vdc Power Supply. The control panel is pre-wired with a 6 foot 120Vac pigtail (for control power), and DIN-rail mount terminals for landing the voltage and CT inputs. The following diagrams show the internal components of the panel (besides the SmartMon Energy Plus), as well as how to where to land the voltage and CT inputs for Energy Measurement.

Control Panel Components



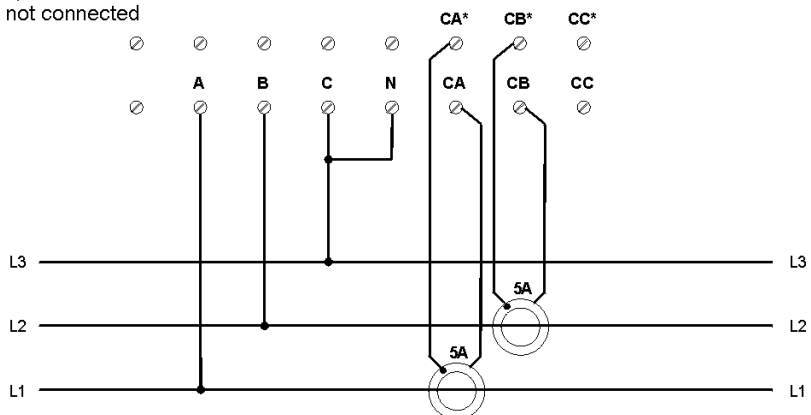
4-wire Wye or 4-wire Delta

Non-labeled terminals pre-wired or not connected



3-wire Delta

Non-labeled terminals pre-wired or not connected



5 INSTALLATION / SAFETY

Warning: Remove power from the SmartMon Monitor, CAN port, and any peripheral equipment connected to this local system before adding or replacing this or any module.

Use the following wire type or equivalent:

- Belden 8917
- 16 AWG or larger

When found on the product, the following symbols specify:



Warning: Consult user documentation.



Warning: Electrical Shock Hazard.

WARNING: To avoid the risk of electric shock or burns, always connect the safety (or earth) ground before making any other connections.

WARNING: To reduce the risk of fire, electrical shock, or physical injury it is strongly recommended to fuse the voltage measurement inputs. Be sure to locate fuses as close to the source as possible.

WARNING: Replace fuse with the same type and rating to provide protection against risk of fire and shock hazards.

WARNING: In the event of repeated failure, do not replace the fuse again as a repeated failure indicates a defective condition that will not clear by replacing the fuse.

WARNING: Only qualified electrical personnel familiar with the construction and operation of this equipment and the hazards involved should install, adjust, operate, or service this equipment. Read and understand this manual and other applicable manuals in their entirety before proceeding. Failure to observe this precaution could result in severe bodily injury or loss of life.

6 TECHNICAL SUPPORT

For assistance and manual up-dates, contact Technical Support at the following locations:

North America:+

(317) 916-4274

www.heapg.com

Europe:

(+) 353-21-4321-266

www.horner-apg.com

NOTES