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RELIABLE SOLUTIONS FOR FACILITY INFRASTRUCTURE MANAGEMENT | TELECOMMUNICATION | POWER UTILITY | WATER & WASTEWATER

ENERGY MODULE

An efficient and reliable source of information

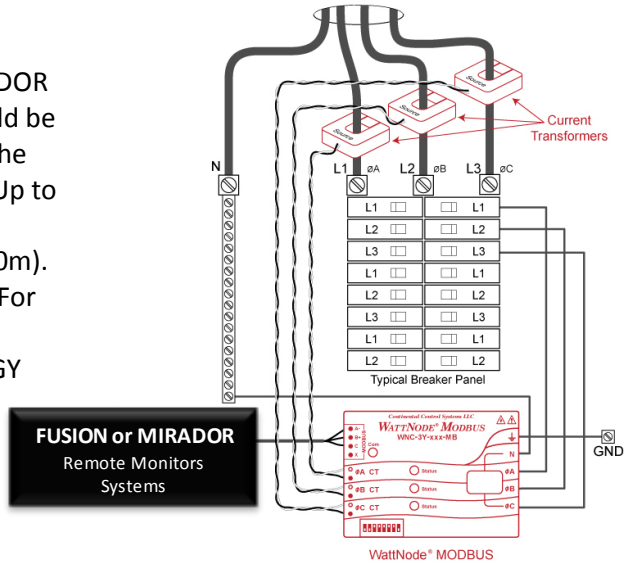
The « ENERGY MODULE » sold by Multitel is an OEM device manufacturered by *Continental Control Systems LLC*. The « ENERGY MODULE » is an AC power and energy meter which is suitable for use in commercial, industrial and residential applications. The module is a kilowatt hour (kWh), energy and power meter that communicates on a EIA RS-485 network, it measures 1, 2, or 3 phases with voltages from 120 to 600 volts Vac and currents from 5 to 6000 amps in delta (phase to phase) and wye (phase to neutral) configurations

APPLICATIONS

The applications cover Monitoring and Targeting, Energy Management, Building Automation, Tenant Submetering, End-use Metering, Equipment Performance Monitoring, Verification, Evaluation, and Diagnostics.

INSTALLATION:

The "ENERGY MODULE" is compatible to FUSION (v4.40)and MIRADOR (v3.50) remote monitoring systems. The "ENERGY MODULE" should be installed near its monitoring location and can be networked using the MLINK or RS-485 communication port of the FUSION / MIRADOR. Up to 16 modules can share the same communication bus. The distance between the monitor and the module should not exceed 1000' (330m). The figure near by demonstrates a typical installation and cabling. For more detailed information, refer to the *manual provided with the "ENERGY MODULE". AC current CTs are used to enable the "ENERGY MODULE" to make AC current measurements.



Necessary Installation material:

- FUSION or Mirador ModBus capable
- "ENERGY MODULE" and included "RJ-12" to screw-type connector converter"
- Current Transformers *(Sold separately)* : Typically one current transformer is required for each phase you are measuring. (See Application Notes for non-standard configurations)

Miscellaneous Installation Items:

- **Mounting: Sheet metal screws #8** *(recommended)* or Velcro / **Junction box** *(sold separately)*
- **Circuit Protection**: One of the following :
  - **Circuit breakers** or **Fuses** (see *Application Note: Fusing the WattNode) and a disconnect switch
- **Line Voltage Wire** (For the voltage inputs): 12-14 AWG (stranded recommended), THWN, THHN, MTW, or AWM.
- Modbus **Communication Wire**: 16-22 AWG (solid or stranded), twisted, optionally shielded.

**Manual and application notes are available at : http://www.ccontrolsys.com/w/WattNode_Modbus_-_Downloads*

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SAFETY NOTE

Warning!: Hazardous Voltages - Only qualified personnel or licensed electricians should install the 'ENERGY MODULE" and current transformers (CTs).

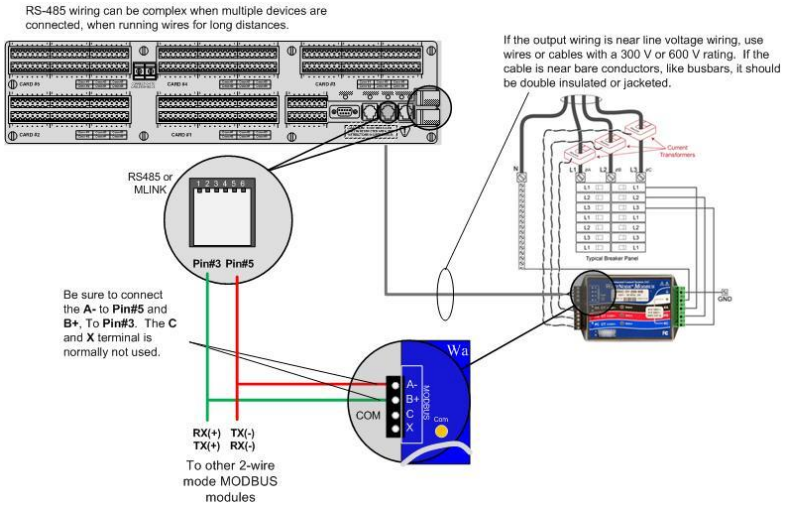
DIAGNOSTIC LEDS

Our diagnostic LEDs provide a per-phase indication of power (green flashing) and negative power (red flashing) to help troubleshoot connection problems, like swapped CTs, or excessive line voltage. The "ENERGY MODULE" also has a red/yellow/green communication LED to indicate traffic, configuration problems, bus contention and other conditions. See the *Manual for full description.

MODBUS COMMUNICATIONS

When the "ENERGY MODULE" is ordered from Multitel, it will come pre-configured and pre-calibrated, meaning that the CT current scale is adjusted accordingly. If for any reason, the measurements provided do not match, contact Multitel customer service for assistance.

- EIA RS-485 Interface
- Baud Rates: 9,600 and 19,200
- Duplex: Half (two-wire)
- Parity: N81 (no parity, 8 data bits, 1 stop bit)
- MODBUS Buffer: 256 bytes
- Response Time: 5 - 300 milliseconds



Multitel offers its expertise and technical assistance when performing configuration, test and/or comissioning of the module installation. Contact Multitel customer service center to get more information. (Fees may be applied)

SPECIFICATIONS

Measurement Configuration: Three phase: 3-wire or 4-wire and Single phase: 2-wire or 3-wire
Accuracy: 0.5% nominal (see Manual for details).
Electrical: Operating Voltage Range: 80% - 115% of nominal and Power Line Frequency Range: 50 to 60 Hz
Environmental: -30°C to +55°C (-22°F to 131°F) and Humidity: 5 to 90% RH (noncondensing)

**Manual and Application notes are available at : http://www.ccontrolsys.com/w/WattNode_Modbus_-_Downloads*

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175-2500 Jean-Perrin Street
Quebec (Quebec)
G2C 1X1 Canada
Tel: 418.847.2255
Fax: 418.847.1966
info@multitel.com
www.multitel.com