Continental Control Systems

WattNode® Modbus

AC Power Measurement for Modbus Networks

The WattNode Modbus is a multi-function networked energy meter. The WattNode MODBUS offers true RMS power, energy and demand metering, plus individual phase measurements of voltage, current, power factor, reactive power and energy, and line frequency. Typical applications include energy monitoring, sub-metering, demand management, power factor control and phase-load monitoring.

Networking the WattNode MODBUS is easy. The WattNode communicates over a half-duplex EIA RS-485 interface. Standard baud rates are 9,600 and 19,200 baud. The WattNode uses the industry standard MODBUS RTU (binary) communication protocol, allowing up to 127 WattNodes per RS-485 subnet.

Ease Of Use and economy of installation were key design criteria. The WattNode MODBUS' compact size permits installation inside of most electrical service panels and junction boxes. Diagnostic LEDs help insure fast, easy, and correct installation. Detachable screw terminals make wiring a snap. The WattNode MODBUS is line-powered and requires no separate power source.

Accuracy of the WattNode MODBUS is 0.5% nominaly (see manual for details). Even with leading or lagging power factor and chopped or distorted wave forms, the WattNode MODBUS measures true RMS power. This makes it ideal for monitoring motors and pumps controlled by variable speed drives or loads with switching power supplies.

The Complete Line of WattNode MODBUS models measures 1, 2, or 3 phases in 2, 3, or 4 wire configurations with nominal voltages from 120 to 600 VAC at 50/60 Hz. Operation from 5 to 5000 Amps is possible by selecting from our line of safe, low-voltage output, current transformers.

kVar

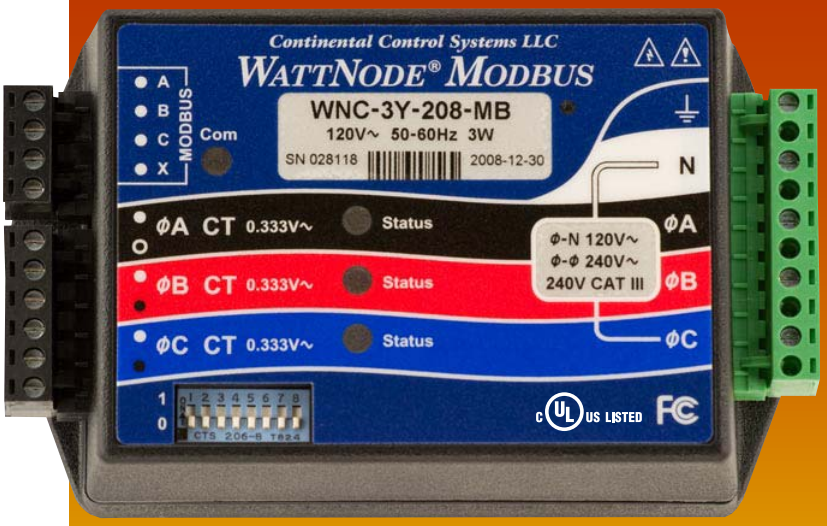
kWh

Volts

Peak Demand

Demand

kW



PF

Frequency

Amps

- **Multiple Measurements**
  kW, kWh, Demand, kVAR, kVARh, PF, Amps, Volts, Frequency
- **Modbus Network Ready**
  Communicates over a half-duplex EIA RS-485 interface
- **Compact Size**
  Fits inside of standard electrical panels and junction boxes
- **Auto-Correcting Polarity**
  Auto-detects RS-485 A/B polarity on properly biased networks, simplifying installation.
- **Measures 1ϕ, 2ϕ, 3ϕ Circuits**
  Flexible, field configurable
- **Line Powered**
  No external power supply required
- **Two Baud Rates**
  9,600 and 19,200 baud
- **Full RS-485 Subnet**
  127 WattNode's per RS-485 subnet.

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Rev0109A

Specifications

WattNode® Modbus

AC Power Measurement for Modbus

Quantities Measured

True RMS Power - Watts (Phase A, B, C, Sum)
Reactive Power - VARs (Phase A, B, C, Sum)
Power Factor (Phase A, B, C, Average)
True RMS Energy - Watthours (Phase A, B, C, Sum)
Reactive Energy - VAR-hours (Sum)
AC Frequency
RMS Voltage (Phase A, Phase B, Phase C)
RMS Current (Phase A, Phase B, Phase C)
Demand and Peak Demand

Measurement Configuration

Three phase: 3-wire or 4-wire
Single phase: 2-wire or 3-wire

User Controlled Inputs

Set CT size in amps
Set demand window type and period
Reset peak demand to zero

Accuracy

0.5% nominal (see manual for details).

Electrical

Operating Voltage Range: 80% - 115% of nominal
Power Line Frequency Range: 50 to 60 Hz

Environmental

-30°C to +55°C (-22°F to 131°F)
Humidity: 5 to 90% RH (noncondensing)

Mechanical

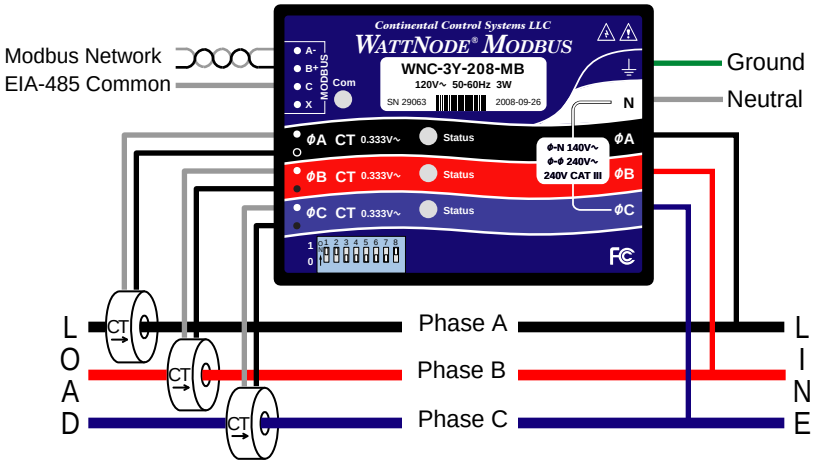
Enclosure: High impact, ABS plastic
Flame Resistance Rating: 94V-0, IEC FV-0
Size: 5.63" × 3.34" × 1.5" (143mm × 85mm × 38mm)
Weight: 10.8 oz (305 gm)
Connectors: Euroblock style pluggable terminal blocks

MODBUS Communication

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

MADE IN THE USA

(888) 928-8663



Models

Model	VAC Line To Neutral	VAC Line To Line	Phases	Wires
WNC-3Y-208-MB	120	208-240	3*	4
WNC-3Y-400-MB	230	400	3*	4
WNC-3Y-480-MB	277	480	3*	4
WNC-3Y-600-MB	347	600	3*	4
WNC-3D-240-MB	N/A	208-240	3	3
WNC-3D-400-MB	N/A	400	3	3
WNC-3D-480-MB	N/A	480	3	3

*Can be used to measure 1, 2 or 3 phase circuits.

Opening Current Transformers (Split Core)

Model	Inside Diameter	Rated Amps
CTS-0750	0.75"	5, 15, 30, 50, 70, 100, 150, 200
CTS-1250	1.25"	70, 100, 150, 200, 250, 300, 400, 600
CTS-2000	2.00"	600, 800, 1000, 1200, 1500
CTB	Bus Bar	600, 800, 1200, 2000, 3000 (custom)

Toroidal Current Transformers (Solid Core)

Model	Inside Diameter	Rated Amps
CTT-0300	0.30"	5, 15, 20, 30
CTT-0500	0.50"	15, 20, 30, 50, 60
CTT-0750	0.75"	30, 50, 70, 100
CTT-1000	1.00"	50, 70, 100, 150, 200
CTT-1250	1.25"	70, 100, 150, 200, 250, 300, 400

Current Transformer Output Voltage: 0 - 0.333 VAC @ rated current

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