

Open Source Meter Inc	3/19/2011	www.opensourcemeter.com
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## Open Source Meter .NET based Energy Meter

A meter developed for the flexible user in-mind. The Open Source Meter is designed to integrate into Ethernet and WiFi networks to provide an online metering solution yet it has enough memory and the processing power to provide an autonomous solution for demanding integration needs.

The meter is based on .NET micro the customer is provided with an SDK including a flexible API that exposes all of the highly flexible peripherals including the display, 3-phase metering inputs, communications (WiFi or Ethernet), external storage memory and pulse inputs or outputs and others. The meter can support the Modbus TCP/RTU communication protocol. Various other common metering protocols such as ANSI C12.2X can be supported by adding a new software communications module. Customizing of the metering application is done using common .net tools with C#.



### Supported Features:

- 0.2% Accuracy
- Auto Ranging Power Supply, 85-264VAC, 50 or 60Hz, Single Phase, 3-Wire, Network, 3 Phase 4 Wire Wye,
- Separate 'Breaker Power Supply', 85-264VAC, 50 or 60Hz.
- Meter Voltage inputs when breaker supplied, 0 to 480VAC
- Mid-Range Meter with quality LCD display for Energy, Current RMS, Voltage RMS, Phase Angle and Custom 32 x 64 logo bitmap.
- Real-time metering, Time-of-Use, load profiling and Load management
- WiFi b/g or Ethernet 10/100 base-T
- Data Storage up to 16Gb
- Open Architecture for .Net Micro
- NEMA Indoor/Outdoor Enclosure
- Optional Alternate use of Data Storage for SD card for Communications
- SDK provides System emulation and debugging from a PC

Due to the nature of the open architecture of this power meter multiple protocols can be supported over the native communications interfaces. The native interfaces are based on the Lantronix MatchPort product line. This provides for both wired and wireless IP connections. The communications interface is supported with strong security protocols for 802.11B/G including AES-CCMP, TKIP Encryption WPA2-Enterprise, WPA2-PSK, WPA-PSK and WEP and for wired SSL, SSH, TLS and encryption: AES, 3DED and RC4. The communications interface also supports an internal web server with CGI and AJAX support.

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## Meter Description

Meter Type	Active and Reactive Kilowatt-hour Meter, Utility Revenue Class
Meter functionality exposed to API	Instantaneous Voltage, Current, Power Irms, Vrms, Apparent, Reactive and Active (Real)Power Active Fundamental and Harmonic Power Reactive Fundamental, Power Factor and Line Frequency Energy-to-pulse Conversion Temperature Sensor
Meter Form	From 2S, Form 5S CT Rated From 1 Amp – 5000 Amp
Meter Service	1 Phase 3 Wire, 120/208 Network, 120/208 3P4W Wye and customizable

## Absolute Maximum Range

Line-to-Line Voltage	480VAC
Current Withstanding (each line)	220A Continuous, 500A Peak for 1 second
<b>Voltage Withstanding Surge:</b>	
ANSI C37.90.0 Oscillatory	2.5kV, 2500 strikes
ANSI C37.90.0 FT	5kV, 2500 strikes
ANSI C62.41 surge	6kV @ 1.2/50ms, 10 strikes
IEC 801-4 Repetitive Burst	4kV, 2.5 kHz for 60 seconds
Dielectric ANSI C12.10	2.5kV rms., 60Hz, 60 seconds

## Operating Ranges

CT Current	.1 or 0.333
Breaker AC Line Voltage	85 to 265VAC
Metering Input Line Voltage	0 to 480VAC
Frequency	50 or 60 Hz, +/- 5%
Temperature	-20 to +70C
Humidity	90% RH, non-condensing