ELKOR

WattsOn

MARK II

PRECISION ENERGY METER

BACnet MS/TP (-M2) Addendum

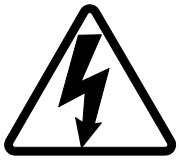
Installation Considerations

Installation and maintenance of the WattsOn device must only be performed by qualified, competent personnel who have appropriate training and experience with electrical high voltage and current installations. The WattsOn device must be installed in accordance with all Local and National Electrical Safety Codes.

WARNING

Failure to observe the following may result in severe injury or death:

- During normal operation of this device, hazardous voltages are present on the input terminals of the device and throughout the connected power lines, including any potential transformers (PTs). With their primary circuit energized, current transformers (CTs) may generate high voltage when their secondary windings are open. Follow standard safety precautions while performing any installation or service work (i.e. remove line fuses, short CT secondaries, etc).
- This device is not intended for protection applications.
- Do not HIPOT and/or dielectric test any of the digital outputs. Refer to this manual for the maximum voltage level the meter can withstand.
- Do not exceed rated input signals as it may permanently damage the device.
- The power supply input should be connected via a rated 12-35 VDC / 24VAC power supply and properly isolated from the line voltage.



Danger

Line voltages up to 600 VRMS may be present on the input terminals of the device and throughout the connected line circuits during normal operation. These voltages may cause severe injury or death. **Installation and servicing must be performed only by qualified, properly trained personnel.**

Limitation of Liability

Elkor Technologies Inc. ("Elkor") reserves the right to make changes to its products and/or their specifications without notice. Elkor strongly recommends obtaining the latest version of the device specifications to assure the most current information is available to the customer. Specifications and manual are available at http://www.elkor.net

Elkor assumes no liability for applications assistance, customer's system design, or infringement of patents or copyrights of third parties by/or arising from the use of Elkor's devices.

ELKOR TECHNOLOGIES INC. SHALL NOT BE LIABLE FOR CONSEQUENTIAL DAMAGES SUSTAINED IN CONNECTION WITH ELKOR PRODUCTS, EXCEPT TO THE EXTENT PROHIBITED BY APPLICABLE LAW. FURTHERMORE, ELKOR NEITHER ALLOWS NOR AUTHORIZES ANY OTHER PERSON TO ASSUME FOR IT ANY SUCH OBLIGATION OR LIABILITY.

Although the information contained in this document is believed to be accurate, Elkor assumes no responsibility for any errors which may exist in this publication.

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1. INTRODUCTION

1.1. Addendum Manual

This manual serves as an addendum to the WattsOn-Mark II manual. The WattsOn-Mark II hardware installation is identical in either of the Modbus/RTU or BACnet MS/TP configurations. The purpose of this manual is to outline the required BACnet configuration steps, as well as the available BACnet objects and options.

The WattsOn-Mark II manual should be reviewed for installation considerations, as well as technical specifications, accuracy ratings and wiring diagrams.

1.2. Revision History

Version	Date	Changes
Revision 1	November 2015	Original Version

2. BACNET MS/TP SPECIFICATIONS

Parameters	
Baud Rates (bps)	9600, 19200, 38400, 57600, 76800, and 115200 *Default: 76800 bps*
Serial Parameters	No Parity, 1 Stop Bit (fixed)
MAC Address *	1-15 (dial), 0-127 (programmable) *Default: 1*
Device Name *(config via software only)*	Up to 16-characters *Default: WattsOn-Mark II*
Device Instance	Programmable (0..4,194,302) *Default: "28xxxxx" where xxxxx is serial number*
Max Master	Programmable (0..127) *Default: 127*

* MAC address may be selected via the DIP switch (for values between 1-15). For other values (between 0 to 127), it is necessary to configure the setting via software, and set the DIP switch to 'F'. In setting 'F', the software configured MAC address takes effect.

NOTE: The BACnet MS/TP parameters are configurable via software and/or the LCD module.

The device must be reset (either software or hardware) for any settings changes to take effect.

3. BACNET PICS

BACnet Protocol Implementation Conformance Statement (PICS)

Date:	November 9, 2015
Vendor Name:	Elkor Technologies, Inc.
Product Name:	WattsOn-Mark II
Product Model Number:	W2-M2-xxxx
Applications Software Version:	V1.300
Firmware Revision:	V10.60
BACnet Protocol Revision:	2

Product Description:

The WattsOn-Mark II is a three-phase, four-quadrant, revenue grade precision power and energy meter. This product supports native BACnet, connecting directly to the MS/TP LAN using baud rates of 9600, 19200, 38400, 57600, 76800, and 115200.

BACnet Standard Device Profile (Annex L):

☐ BACnet Operator Workstation (B-OWS)
☐ BACnet Building Controller (B-BC)
☐ BACnet Advanced Application Controller (B-AAC)
☒ BACnet Application Specific Controller (B-ASC)
☐ BACnet Smart Sensor (B-SS)
☐ BACnet Smart Actuator (B-SA)

BACnet Interoperability Building Blocks Supported (Annex K):

☒ Data Sharing – ReadProperty-A (DS-RP-A)
☒ Data Sharing – ReadProperty-B (DS-RP-B)
☒ Data Sharing – ReadPropertyMultiple-B (DS-RPM-B)
☒ Data Sharing – WriteProperty-A (DS-WP-A)
☒ Data Sharing – WriteProperty-B (DS-WP-B)
☒ Data Sharing – WritePropertyMultiple-B (DS-WPM-B)
☒ Data Sharing – COV-B (DS-COV-B)
☒ Device Management – Dynamic Device Binding-A (DM-DDB-A)
☒ Device Management – Dynamic Device Binding-B (DM-DDB-B)
☒ Device Management – Dynamic Object Binding-B (DM-DOB-B)
☒ Device Management – DeviceCommunicationControl-B (DM-DCC-B)
☒ Device Management – ReinitializeDevice-B (DM-RD-B)

Segmentation Capability:

None

☐ Segmented requests supported Window Size _____
☐ Segmented responses supported Window Size _____

Standard Object Types Supported:

See "Object Types/Property Support Table" for object details.

Data Link Layer Options:

☐ BACnet IP, (Annex J)
☐ BACnet IP, (Annex J), Foreign Device
☐ ISO 8802-3, Ethernet (Clause 7)
☐ ANSI/ATA 878.1, 2.5 Mb. ARCNET (Clause 8)
☐ ANSI/ATA 878.1, RS-485 ARCNET (Clause 8), baud rate(s) _____
☒ MS/TP master (Clause 9), baud rate(s): 4800, 9600, 19200, 38400, 57600, 76800, 115200
☐ MS/TP slave (Clause 9), baud rate(s): _____
☐ Point-To-Point, EIA 232 (Clause 10), baud rate(s): _____
☐ Point-To-Point, modem, (Clause 10), baud rate(s): _____
☐ LonTalk, (Clause 11), medium: _____
☐ Other: _____

Device Address Binding:

Is static device binding supported? (This is currently for two-way communication with MS/TP slaves and certain other devices.) ☒ Yes ☐ No

Networking Options:

☐ Router, Clause 6 - List all routing configurations
☐ Annex H, BACnet Tunneling Router over IP
☐ BACnet/IP Broadcast Management Device (BBMD)
Does the BBMD support registrations by Foreign Devices? ☐ Yes ☐ No

Character Sets Supported:

Indicating support for multiple character sets does not imply that they can all be supported simultaneously.

☒ ANSI X3.4 ☐ IBM™/Microsoft™ DBCS ☐ ISO 8859-1
☐ ISO 10646 (UCS-2) ☐ ISO 10646 (UCS-4) ☐ JIS C 6226

If this product is a communication gateway, describe the types of non-BACnet equipment/networks(s) that the gateway supports:

Refer to protocol-specific manuals for other supported protocols.

Data Types Supported:

The following table summarizes the data types that are accepted (in the case of a write property service) and returned (in the case of a read property service) when targeting the present value property of each supported object type.

Object Type	Service	
	Read Property	Write Property
Analog Output **Analog Value**	Real	Real, Unsigned, Integer, Null
Analog Input	Real	N/A
Binary Output **Binary Value**	Enumerated	Enumerated, Boolean, Real, Unsigned, Integer, Null
Binary Input	Enumerated	N/A
Multi-state Output **Multi-state Value**	Unsigned	Real, Enumerated, Unsigned, Integer, Null
Multi-state Input	Unsigned	N/A

Object Types/Property Support Table

The following table summarizes the Object Types/Properties supported.

Property	Object Type									
	Device	Binary Input	Binary Output	Binary Value	Analog Input	Analog Output	Analog Value	Multi-state Input	Multi-state Output	Multi-state Value
Object Identifier	R	R	R	R	R	R	R	R	R	R
Object Name	R	R	R	R	R	R	R	R	R	R
Object Type	R	R	R	R	R	R	R	R	R	R
System Status	R									
Vendor Name	R									
Vendor Identifier	R									
Model Name	R									
Firmware Revision	R									
App Software Revision	R									
Protocol Version	R									
Protocol Revision	R									
Services Supported	R									
Object Types Supported	R									
Object List	R									
Max APDU Length	R									
Segmentation Support	R									
APDU Timeout	R									
Number APDU Retries	R									
Max Master	R									
Max Info Frames	R									
Device Address Binding	R									
Database Revision	R									
Present Value		R	W	W	R	W	W	R	W	W
Status Flags		R	R	R	R	R	R	R	R	R
Event State		R	R	R	R	R	R	R	R	R
Out-of-Service		R	R	R	R	R	R	R	R	R
Number of States								R	R	R
Units					R	R	R			
Priority Array			R	R		R	R			
Relinquish Default			R	R		R	R			
COV Increment					W	W	W			
Polarity		R	R							
Inactive Text		R	R	R						
Active Text		R	R	R						

R – readable using BACnet services
W – readable and writable using BACnet services

4. BACNET OBJECT LIST

4.1. Object Properties

- **Object Type (AI = Analog Input, AV = Analog Value)**
- **RW: Read/Write Capable**
- **R: Read Only**

Object Type	Object Name	Instance	Units	Unit Value	R/W	Comments	Manual Page
AI	Uptime	1	seconds	73	R		
AI	kW_Total	4	kilowatts	48	R		
AI	kVAR_Total	5	kilovolt-amperes	12	R		
AI	kVA_Total	6	kilovolt-amperes-reactive	9	R		
AI	Volts_LN_Avg	7	volts	5	R		
AI	Volts_LL_Avg	8	volts	5	R		
AI	Current_Avg	9	amperes	3	R		
AI	PF_Total	10	power-factor	15	R		
AI	Frequency	11	Hertz	27	R		
AI	Volts_Angle_Avg	12	degrees-angular	90	R		
AI	Quadrant_Total	13	No Units		R		
AI	Volts_AN	14	volts	5	R		
AI	Volts_BN	15	volts	5	R		
AI	Volts_CN	16	volts	5	R		
AI	Volts_AB	17	volts	5	R		
AI	Volts_BC	18	volts	5	R		
AI	Volts_AC	20	volts	5	R		
AI	Current_A	21	amps	3	R		
AI	Current_B	22	amps	3	R		
AI	Current_C	23	amps	3	R		
AI	kW_A	24	kilowatts	48	R		
AI	kW_B	25	kilowatts	48	R		
AI	kW_C	26	kilowatts	48	R		
AI	kVAR_A	27	kilovolt-amperes	12	R		
AI	kVAR_B	28	kilovolt-amperes	12	R		
AI	kVAR_C	29	kilovolt-amperes	12	R		
AI	kVA_A	30	kilovolt-amperes-reactive	9	R		
AI	kVA_B	31	kilovolt-amperes-reactive	9	R		
AI	kVA_C	32	kilovolt-amperes-reactive	9	R		
AI	PF_A	33	power-factor	15	R		
AI	PF_B	34	power-factor	15	R		
AI	PF_C	35	power-factor	15	R		
AI	Volts_Angle_AB	36	degrees-angular	90	R		
AI	Volts_Angle_BC	37	degrees-angular	90	R		
AI	Volts_Angle_AC	38	degrees-angular	90	R		
AI	Quadrant_A	39	No Units		R		
AI	Quadrant_B	40	No Units		R		
AI	Quadrant_C	41	No Units		R		
AI	kW_Demand	42	kilowatts	48	R		
AI	kWh_Net_Ttl	43	kilowatt-hours	19	R		
AI	kVAh_Net_Ttl	44	kilowatt-hours	19	R	The actual unit is "kVAh"	
AI	kWh_Import_Ttl	45	kilowatt-hours	19	R		
AI	kWh_Export_Ttl	46	kilowatt-hours	19	R		
AI	kVAh_Import_Ttl	47	kilowatt-hours	19	R	The actual unit is "kVAh"	
AI	Q1_VARh_Ttl	48	kilowatt-hours	19	R	The actual unit is "kVARh"	
AI	Q2_VARh_Ttl	49	kilowatt-hours	19	R	The actual unit is "kVARh"	
AI	Q3_VARh_Ttl	50	kilowatt-hours	19	R	The actual unit is "kVARh"	
AI	Q4_VARh_Ttl	51	kilowatt-hours	19	R	The actual unit is "kVARh"	
AI	Q1+Q2_VARh_Ttl	52	kilowatt-hours	19	R	The actual unit is "kVARh"	
AI	Q3+Q4_VARh_Ttl	53	kilowatt-hours	19	R	The actual unit is "kVARh"	
AI	kWh_Net_A	54	kilowatt-hours	19	R		
AI	kWh_Net_B	55	kilowatt-hours	19	R		
AI	kWh_Net_C	56	kilowatt-hours	19	R		
AI	kVA_Net_A	57	kilowatt-hours	19	R	The actual unit is "kVAh"	
AI	kVA_Net_B	58	kilowatt-hours	19	R	The actual unit is "kVAh"	

Object Type	Object Name	Instance	Units	Unit Value	R/W	Comments	Manual Page
AI	kVA_Net_C	59	kilowatt-hours	19	R	The actual unit is "kVAh"	
AI	kWh_Import_A	60	kilowatt-hours	19	R		
AI	kWh_Import_B	61	kilowatt-hours	19	R		
AI	kWh_Import_C	62	kilowatt-hours	19	R		
AI	kWh_Export_A	63	kilowatt-hours	19	R		
AI	kWh_Export_B	64	kilowatt-hours	19	R		
AI	kWh_Export_C	65	kilowatt-hours	19	R		
AI	kVA_Import_A	66	kilowatt-hours	19	R	The actual unit is "kVAh"	
AI	kVA_Import_B	67	kilowatt-hours	19	R	The actual unit is "kVAh"	
AI	kVA_Import_C	68	kilowatt-hours	19	R	The actual unit is "kVAh"	
AI	kVA_Export_A	69	kilowatt-hours	19	R	The actual unit is "kVAh"	
AI	kVA_Export_B	70	kilowatt-hours	19	R	The actual unit is "kVAh"	
AI	kVA_Export_C	71	kilowatt-hours	19	R	The actual unit is "kVAh"	
AI	kVARh_Q1_A	72	kilowatt-hours	19	R	The actual unit is "kVARh"	
AI	kVARh_Q1_B	73	kilowatt-hours	19	R	The actual unit is "kVARh"	
AI	kVARh_Q1_C	74	kilowatt-hours	19	R	The actual unit is "kVARh"	
AI	kVARh_Q2_A	75	kilowatt-hours	19	R	The actual unit is "kVARh"	
AI	kVARh_Q2_B	76	kilowatt-hours	19	R	The actual unit is "kVARh"	
AI	kVARh_Q2_C	77	kilowatt-hours	19	R	The actual unit is "kVARh"	
AI	kVARh_Q3_A	78	kilowatt-hours	19	R	The actual unit is "kVARh"	
AI	kVARh_Q3_B	79	kilowatt-hours	19	R	The actual unit is "kVARh"	
AI	kVARh_Q3_C	80	kilowatt-hours	19	R	The actual unit is "kVARh"	
AI	kVARh_Q4_A	81	kilowatt-hours	19	R	The actual unit is "kVARh"	
AI	kVARh_Q4_B	82	kilowatt-hours	19	R	The actual unit is "kVARh"	
AI	kVARh_Q4_C	83	kilowatt-hours	19	R	The actual unit is "kVARh"	
AV	CT_Primary_All	0	No Units		R/W	Setting this value will set the CT (Primary) for all three phases identically	19
AV	CT_Secondary_All	1	No Units		R/W	Setting this value will set the CT (Secondary) for all three phases identically	19
AV	CT_Primary_A	2	No Units		R/W	CT Ratio (Primary & Secondary) for each phase (A,B,C) may be individually set	19
AV	CT_Secondary_A	3	No Units		R/W		
AV	CT_Primary_B	4	No Units		R/W		
AV	CT_Secondary_B	5	No Units		R/W		
AV	CT_Primary_C	6	No Units		R/W		
AV	CT_Secondary_C	7	No Units		R/W		
AV	PT_Primary_All	8	No Units		R/W	Setting this value will set the PT (Primary) for all three phases identically	21
AV	PT_Secondary_All	9	No Units		R/W	Setting this value will set the PT (Secondary) for all three phases identically	21
AV	PT_Primary_A	10	No Units		R/W	PT Ratio (Primary & Secondary) for each phase (A,B,C) may be individually set	21
AV	PT_Secondary_A	11	No Units		R/W		
AV	PT_Primary_B	12	No Units		R/W		
AV	PT_Secondary_B	13	No Units		R/W		
AV	PT_Primary_C	14	No Units		R/W		
AV	PT_Secondary_C	15	No Units		R/W		
AV	Phase_Comp_All	16	No Units		R/W	Phase compensation (set equally for all phases)	24
AV	Phase_Comp_A	17	No Units		R/W	Phase compensation for each phase may be individually set	24
AV	Phase_Comp_B	18	No Units		R/W		
AV	Phase_Comp_C	19	No Units		R/W		
AV	Window_Length	20	No Units		R/W	The length in seconds of a sub-interval for sliding window power	24
AV	Window_Count	21	No Units		R/W	The number of sub-intervals for sliding window power	24
AV	Window_Sync	22	No Units		R/W	Resets the timer of the sliding window power calculation	24
AV	Freq_Auto	23	No Units		R/W	Auto-select a valid voltage channel for frequency measurements	25
AV	Freq_Channel	24	No Units		R/W	Voltage channel used to measure frequency. 0, 1, 2, for A, B, C	25
AV	PF_Sign_Mode	25	No Units		R/W	Indicates how the sign of the power factor is calculated	25
AI	Serial_Number	100	No Units		R	Factory programmed Serial Number of the device	

Object Type	Object Name	Instance	Units	Unit Value	R/W	Comments	Manual Page
AI	Debug_Register	101	No Units		R	Always returns 1234.567. Useful for verifying proper communications with the device	
AI	Hardware_Ver	102	No Units		R	Device Hardware Version	
AI	Firmware_Ver	103	No Units		R	Device Firmware Version	
AI	Bootloader_Ver	104	No Units		R	Device Bootloader Version	
AI	Model_Number	105	No Units		R	Two-byte ASCII string. 19762 indicates "M2" model	
AI	Input_Config	106	No Units		R	"1" for mA CTs, "2" for mV CTs, "3" for 5A CTs, "4" for Rogowski Coil, "0" for Custom Setup	
AV	K1_Reg_Offset	26	No Units		R/W	Offset Register for K1 Relay	29
AV	K1_Trigger_Type	27	No Units		R/W	Trigger type for K1 Relay	29
AV	K1_Upper_Bound	28	No Units		R/W	Upper Bound for K1 Relay	29
AV	K1_Lower_Bound	29	No Units		R/W	Lower Bound for K1 Relay	29
AV	K1_Min_Duration	30	No Units		R/W	Minimum Duration for K1 Relay	29
AV	K1_Active_Mode	31	No Units		R/W	Output Mode for K2 Relay	29
AV	K2_Reg_Offset	32	No Units		R/W	Offset Register for K2 Relay	29
AV	K2_Trigger_Type	33	No Units		R/W	Trigger type for K2 Relay	29
AV	K2_Upper_Bound	34	No Units		R/W	Upper Bound for K2 Relay	29
AV	K2_Lower_Bound	35	No Units		R/W	Lower Bound for K2 Relay	29
AV	K2_Min_Duration	36	No Units		R/W	Minimum Duration for K2 Relay	29
AV	K2_Active_Mode	37	No Units		R/W	Output Mode for K2 Relay	29
AV	Passcode	38	No Units		R/W	Used for entering a passcode when locking or unlocking the device.	22
AV	Lock	39	No Units		R/W	"0" indicates unlocked. "1" indicates locked. With a passcode entered above, write "0" to unlock, "1" to lock, or "2" to change passcode.	22
AV	Reset_Energy	40	No Units		R/W	Write 0xA5A5 (42405) to reset the accumulated energy to 0	22
AV	Reboot_Device	41	No Units		R/W	Write 0xAA55 (43605) to reboot the device. Always reads "0"	

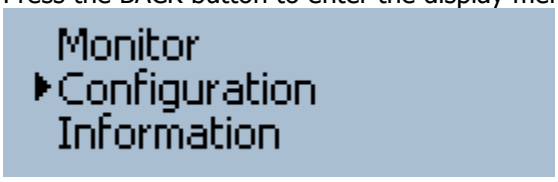
5. BACNET CONFIGURATION

Configuration of the WattsOn-Mark II BACnet MS/TP network parameters may be done using the on-board display or the the Expansion Bus (second RS-485 port) using a Windows based PC.

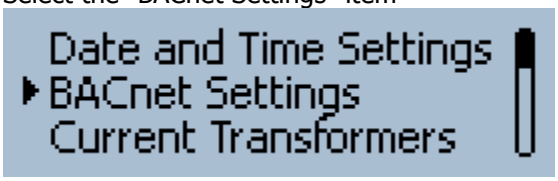
5.1. Configuration using the on-board Display (if equipped with –DL option)

If the WattsOn-Mark II is equipped with the optional DL (Datalogging and LCD module), the BACnet MS/TP paramters may be configured using the screen and buttons.

1. Press the BACK button to enter the display menu, and select the "Configuration" item.



2. Select the "BACnet Settings" item



3. Configure the Items from the menu as necessary:
   - **MAC on DIP 'F'** (between 0 and 127)
   - **BAUD rate** (9600, 19.2 kbps, 38.4 kbps, 57.6 kbps, 76.8 kbps, 115.2 kbps
   - **Instance** (between 0 and 4,194,302)
   - **Max Master** (between 1 and 127)

4. Once the settings are configured as desired, the option "**Commit"** must be selected for the BACnet MS/TP network settings to take effect. Alternatively, the device many be power cycled.

5.2. Configuration using software utility

The BACnet MS/TP parameters may be configured via a free configuration utility, available at the Elkor Technologies Inc. Website (http://www.elkor.net/bin/W2_BACnet_cfg.zip)

To use the utility, a PC running Windows and an RS-485 serial port are required. The RS-485 port may be a USB-to-RS-485 cable such as Elkor's ET485U. The software drivers for the cable must be installed, and the port must be visible under device manager (refer to converter documentation). The COM port number of the installed cable must be known.

1. Connect the RS-485 cable to your computer. Make sure you know its COM port number.

2. Wire the RS-485 cable to the **EXPANSION BUS (X. Bus)** terminals of the WattsOn-Mark II. Do NOT wore the converter to the RS-485 Modbus/RTU port, as it will not work in this way.

3. Extract the software to a known location on your hard drive and execute it. The software is a one-file executable, and does not require and specific installation.

4. Upon execution of the program, the drop down list will be populated with a list of available COM ports on the PC. If the desired COM port is not listed, please refer to troubleshooting/installation of the RS-485 converter.

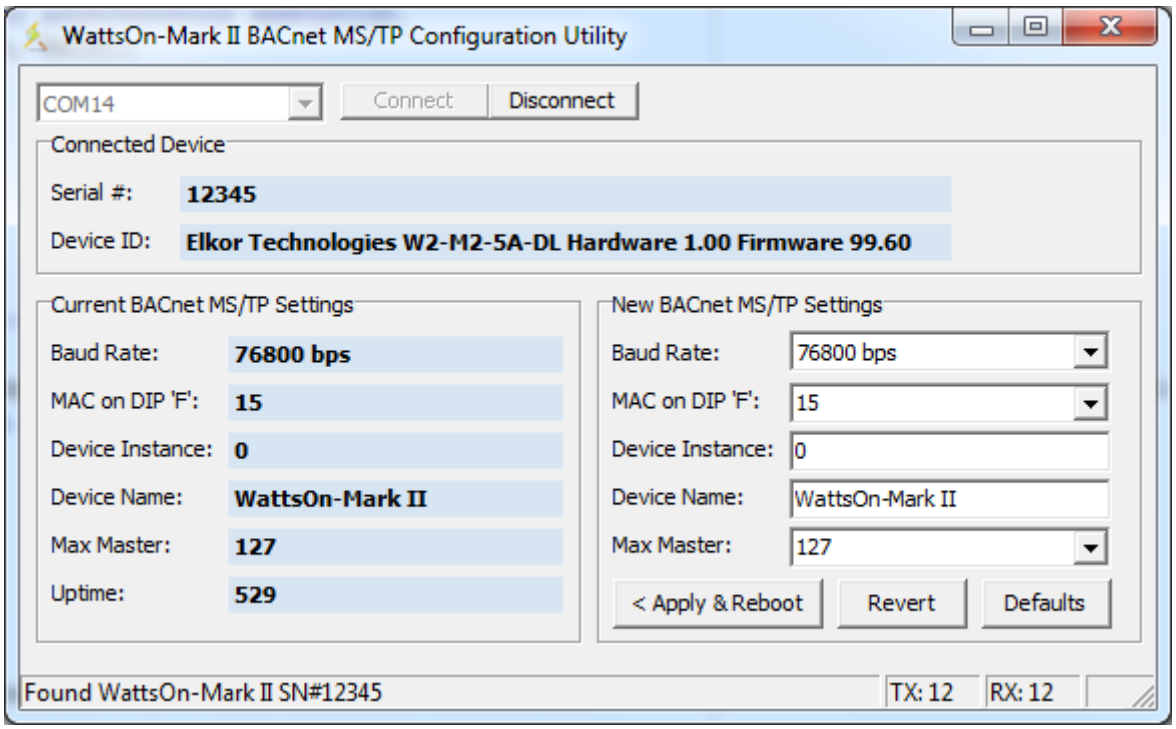
5. Select the COM port, and click "Connect".

6. Wait a few seconds until the fields are populated with the device information. Ensure that the device shows as a "Elkor Technologies Inc W2-M2" device.

7. The software will populated the "Current BACnet MS/TP Settings" window with the configuration as currently stored on the WattsOn-Mark II

8. Make the necessary adjustments in the "New BACnet MS/TP Settings" window.

9. Once adjustments are made, press "Apply & Reboot" to write the values to the WattsOn-Mark II and send a software reboot. The reboot is necessary for the new BACnet MS/TP settings to take effect.



5.3. Configuration using Modbus/RTU

Although the W2-M2 model does not have full Modbus/RTU support (the Modbus/RTU port is replaced by the BACnet MS/TP port), it is possible to use Modbus/RTU through the Expansion Bus (X. Bus) terminal. To do so, the Modbus/RTU master must be correctly wired to the X. Bus terminal. Additionally, the serial configuration must be set to 115200,N,8,1. The WattsOn will answer to *any* Modbus address on which it is queried. By default, it is recommended to use address "1".

List of BACnet MS/TP configuration registers

Name	Offset	Address	Size	Type	R/W	Default	Description
MAC on DIP 'F'	0x550	41361	16	U	R/W	15	MAC address to be used when DIP is set to 'F'.
BAUD Rate	0x551	41362	16	U	R/W	768	BAUD rate for the BACnet MS/TP network.
Instance	0x552	41363	32	U	R/W	<serial number>	Device instance for this meter
Max Master	0x554	41365	16	U	R/W	127	MAX Master setting for the BACnet MS/TP network
Commit	0x555	41366	16	U	R/W	0	Reset the BACnet MS/TP network and apply the new settings.
Name [0]	0x556	41367	16	U	R/W	0x5761	Up to 16-character Device Name. Default is "WattsOn-Mark II"
Name [1]	0x557	41368	16	U	R/W	0x7474	
Name [2]	0x558	41369	16	U	R/W	0x734F	
Name [3]	0x559	41370	16	U	R/W	0x6E2D	
Name [4]	0x560	41371	16	U	R/W	0x4D61	
Name [5]	0x561	41372	16	U	R/W	0x726B	
Name [6]	0x562	41373	16	U	R/W	0x2049	
Name [7]	0x563	41374	16	U	R/W	0x4900	

Register details:

MAC on DIP 'F': The BACnet MS/TP MAC address to be used when the DIP switch is set to position 'F'. In positions 1-14 ('E'), the physical position of the DIP switch sets the MAC address. NOTE: DIP switch position '0' is invalid, and must not be used. If a MAC address of "0" is desired, then the DIP switch must be placed into position 'F' and this register must be set to "0". An invalid setting will cause the BACnet MS/TP network to fail on startup.

BAUD Rate: The value written here is the baud rate in bps divided by 100. ie: 9600 = 96, 19200 = 192, 115200 = 1152. No error checking is done, and an invalid setting will cause the BACnet MS/TP network not to function. Valid values are: 96, 192, 384, 576, 768, 1152). An invalid setting will cause the BACnet MS/TP network to fail on startup.

Device Instance: The desired device instance. No error checking is done. Value must be between 0 to 4194302. An invalid setting will cause the BACnet MS/TP network to fail on startup.

Max Master: The desired MAX MASTER setting. No error checking is done. Value must be between 0 to 127. An invalid setting will cause the BACnet MS/TP network to fail on startup.

Commit: A CHANGE in this value will cause the BACnet MS/TP network to reset with any changed parameters. This resets the network only, and not the entire WattsOn-Mark II device.

Name [0]-[7]: The device name, as stored in the BACnet Device Object. This is a 16-character string. Each character ASCII value is encoded sequentially in the registers as two-bytes per register. If the string is shorter than 16-characters, then the remaining characters must be "0".

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