

# E-Mon D-Mon<sup>®</sup> Installation Manual

## GW-2 Dual-Point Wireless Module



Dear Valued Customer,

We are pleased that you chose to buy one of our product and want you to be just as pleased with owning it. Before installing your new E-Mon product, please read the information on the following pages carefully.

We believe that you will find the E-Mon D-Mon meters easy to install and to use for monitoring and evaluating your electrical usage.

To be sure that you are 100% satisfied with your products, we provide toll-free technical and sales support Monday through Friday, 8:00 am to 7:30 pm, EST: (800) 334-3666. You may also reach us via email at info@emon.com.

If you have questions, we can handle them quickly and effectively with a telephone call. Please let us try to help you BEFORE you remove your meter. And to help us help you, we ask that you have all relevant information on hand when you call (model or part numbers, nature of difficulty, etc.)

Be sure to forward this manual to the owner after installation is complete, so that they may use it as a reference guide when reading the E-Mon D-Mon meter.

Thank you.

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## 1.0 Introduction

The E-Mon D-Mon® GW-2 dual-point wireless module is a mesh network RF unit designed to interface with meters and other devices equipped with a pulse (contact) output capability. As such, it can be used on systems which include the E-Mon wireless submeters or it can be used independently on systems reading other pulse devices. It reports data to a gateway unit that reads all modules in the system and provides an interface to the AMR (Automatic Meter Reading) system's computer and E-Mon Energy™ software.

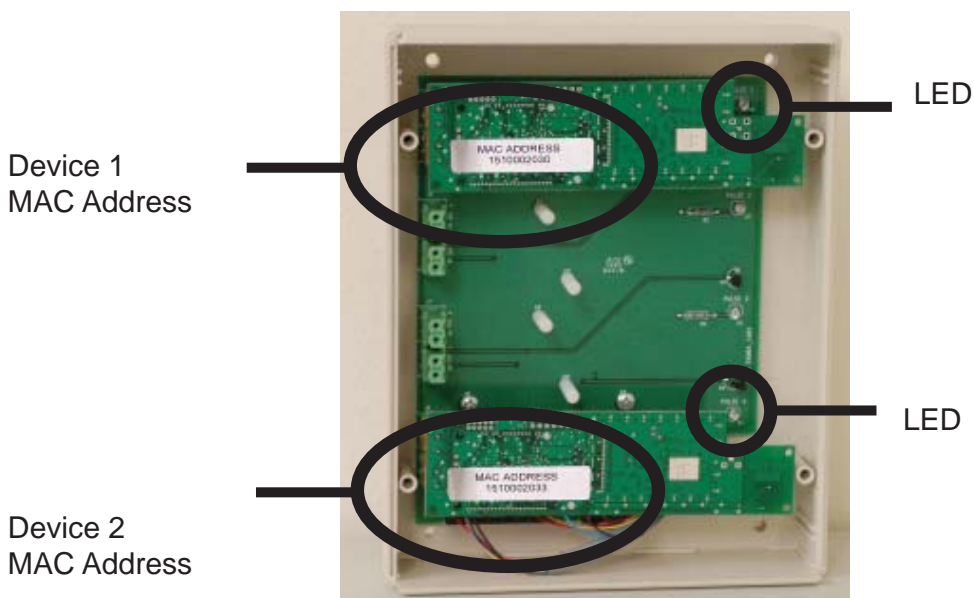
The GW-2 requires a source of 120 VAC power to operate. Data input is from devices and meters having a contact pulse output. The pulses are stored in the GW-2 as interval data in 15-minute time-stamped segments. This allows the software to provide detailed graphs and charts that show usage patterns in addition to total consumption.

As the GW-2 has full mesh capability, it will begin to establish communication to the gateway as soon as it is powered up. The mesh network is self-configuring and self-healing (if a unit is removed.) Each unit has a specific and unique address for each input. This must be noted in order to be associated with the meter that it is connected to.

### 1.1 Module Addresses

The addresses of each GW-2 module are located on the RF cards under the unit's cover. See fig. 1 below for assistance in locating this information. Notation of each MAC address is important as it must be associated with the device connected to the module for proper data acquisition.

Figure 1



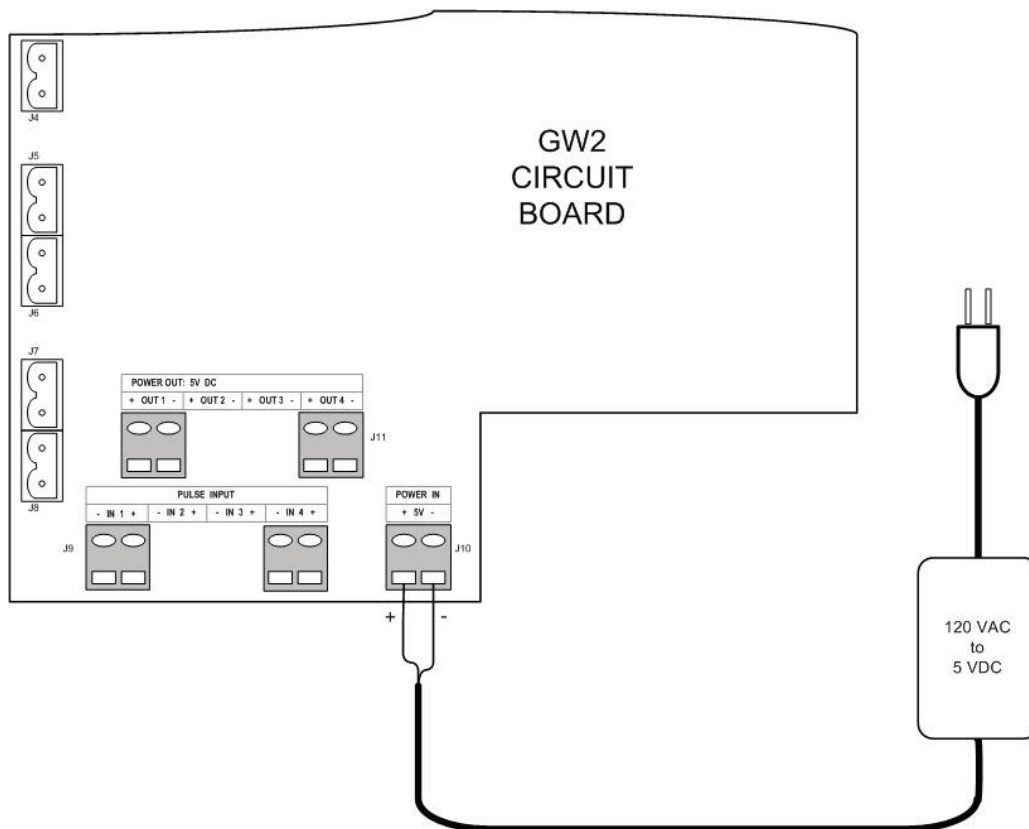
## 2.0 Installation Instructions

The E-Mon D-Mon GW-2 wireless module requires a source of 120 VAC to power it. The 120 VAC to 5 VDC power supply is included with the module. **The power supply is plugged into an available convenience type outlet. It is important that the 120 VAC outlet remains on all the time and that the power supply is plugged in at all times. Loss of power will result in loss of data for that time period.** The 5 VDC power cable may be extended as long as proper polarity is maintained when it is connected to the GW-2 module.

Remove the four screws that hold the cover on the module and remove the cover to access the circuit board. Mount the GW-2 module using the four mounting holes inside the enclosure. Remove the lower RF module to access the wiring terminals.

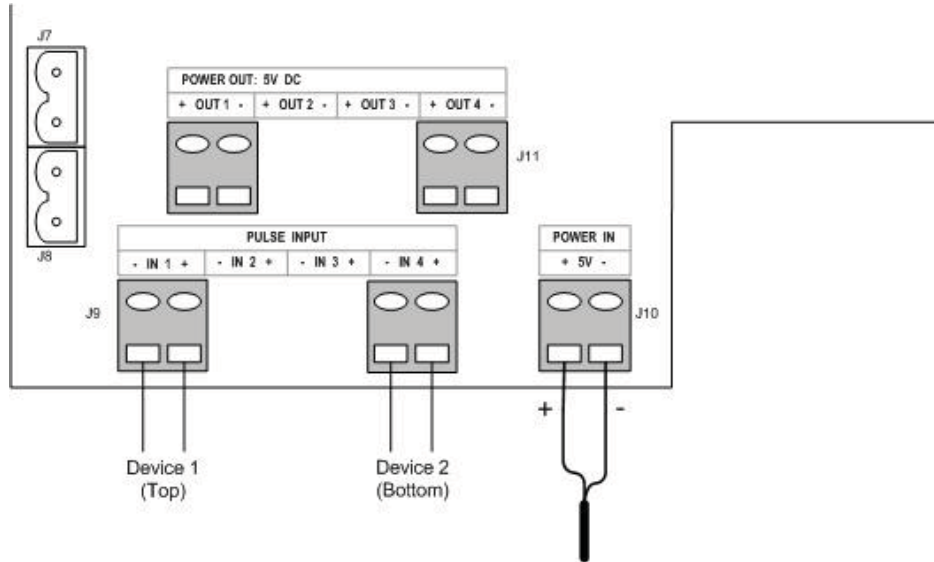
The devices connect to the GW-2 module through the pulse input terminals on the circuit board. If a solid-state switch is used on the pulse device, the proper polarity must be observed. See the device manufacturer's instructions for details. The left two pulse input terminals are for the top card. The right two pulse input terminals are for the bottom card. The two center positions are not used in this unit.

Wire the power supply to the power in terminals maintaining proper polarity. Plug the power supply into a 120 VAC receptacle. 5 VDC will now be present at the power in terminals. Test the pulse input terminals by temporarily placing a jumper between the + and - terminals. The respective LED on the main board should illuminate when this is done.



## 2.0 Installation Instructions (continued)

Wire the pulse output device to the Pulse Input terminal strip on the GW-2 module. Only the left two and right two terminals are used. Do not attach any wiring to the center four terminals.



If the pulse output device is an electronic switch with polarity sensitivity, be sure to observe the polarity symbols on the GW-2 terminals. A physical switch (reed switch, etc.) does not have this polarity requirement. If pulses are being received, the top and bottom (Pulse 1 and Pulse 4) LEDs should blink as each pulse is received.

***E-Mon TEMPMOD and RHMOD devices require power from the “Power Out” terminal strip in the GW-2. See their appropriate installation manuals for additional information.***

Replace the lower RF module after the input wiring has been completed.

Check to see if all wiring is tight and the RF modules are properly inserted. Place the cover back on the GW-2 module.

## **2.0 Installation Instructions (Continued)**

The GW-2 will now search for the gateway and establish its two RF modules to the wireless mesh network. The proper time and date will be sent to the GW-2 module from the gateway for load profile recording.

## **3.0 Additional Information**

The GW-2 module works in conjunction with the wireless gateway. This device is used as the data gathering and communication point for wireless devices on the system. Whether the modules are used for water, gas, humidity, temperature, or are an internal component of the electric meters, the gateway is necessary to provide the gathering point for the data from the modules and the communication means to the computer and E-Mon Energy software.



Wireless Gateway

The gateway can be used to directly interface with the computer over Ethernet or can be accessed over the internet when it is set up with a public IP address. A software program provides for the communication with the gateway and for conversion to the proper data format used by E-Mon Energy software for billing and analysis.

#### 4.0 Technical Specifications

Size	8" L x 6.5" W x 1.75" H
Operating Frequency	903-928 MHz
Mode	Frequency Hopping Spread Spectrum
Data Rate	76.8 Kbps
RF Output	20 dBm
Sensitivity	-93 dBm
Range	Indoor: > 1000 feet Outdoor: 200-400 feet
Input	Dry contact
Power Supply	120 VAC (5 VDC to module)
Environmental	-40 degrees Celsius to +85 degrees Celsius
Internal Data Storage	> 1 month

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