WM8000: Installation Guide

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TABLE OF CONTENTS

Please Read This Manual Carefully

Due to the unique technology engineered into this versatile product, there are a number of configurations possible. Please read this guide carefully to reduce the chances of an improper setup.

Section 1: Taking Inventory

Items Included in box:

- 1 WM-8000 monitor
- 2 wall-mount tabs
- Instruction Manual
- Battery backup (optional)
- External mount antenna (optional)

Section 2: Installation

The WM-8000 enclosure is rated NEMA 4X and is designed to be dust- and rain-proof. Mount the enclosure to a solid wall or equipment board using the included wall-mount tabs.

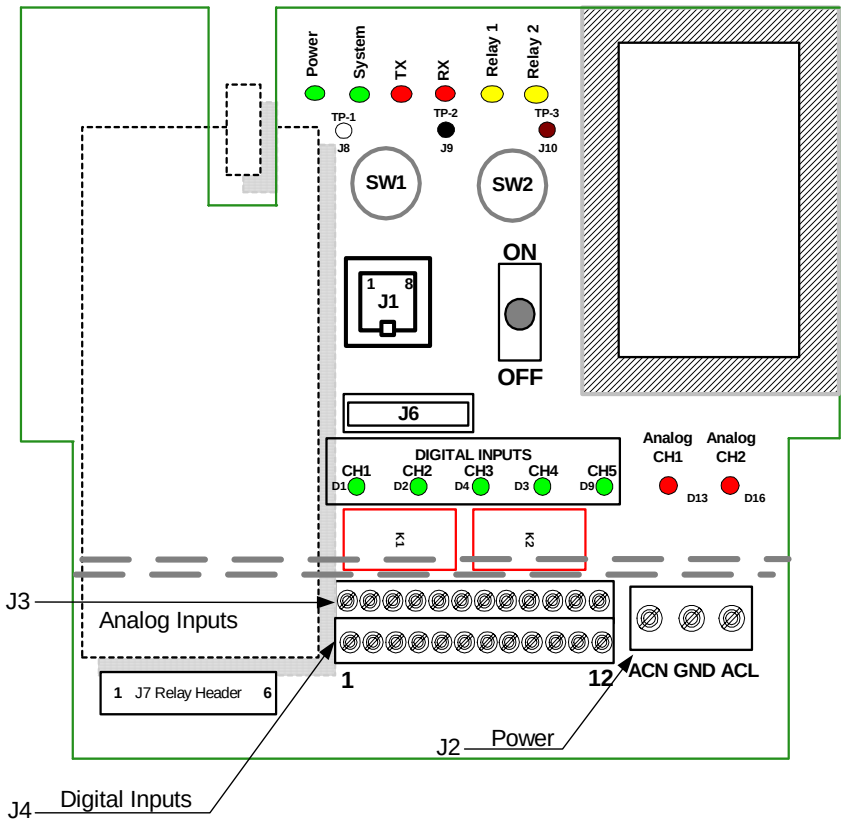
- Always mount the WM-8000 in a location that it is easily accessible and out of the way of other equipment that may need servicing.
- Make certain that the supply voltage is between with acceptable tolerances and not connected to a wall switch that can accidentally turn off the device.
- If the device is going to monitor analog voltages, first check the monitored device voltage range and verify switch settings are correct before connecting the monitored voltage to the WM-8000.
- NEVER connect the WM8000 in parallel with other data loggers or monitoring devices. ALWAYS use a separate circuit or voltage/pulse splitting devices to isolate the signals going to other logger or monitoring devices.
- Make sure that the device does not have any metallic obstructions within an 8” radius of the antenna.
- Mount device as high as possible to improve the quality of communications.
- For electromagnetically “noisy” environments, ALWAYS use shielded cables to ensure clean input voltages. Be sure to ground one side of the shield to a WM8000 ground connection.

CAUTION: Be careful when connecting HIGH DC VOLTAGE to the Analog input.

Section 3: System Overview

Figure 1 provides an overview of the WM8000 hardware. The device includes various status lights, configuration switches (SW-1, SW-2), input/output terminals (J3, J4, and J7), on/off switch, voltage supply terminal (J2), and a serial communications port (J1).

Figure 1: System Overview



Pin	J3	Pin	J4
1	Voltage Input 1	13	Capture Input 1
2	Voltage Input 2	14	+5V Source 1
3	Low Signal Amp -	15	Capture Input 2
4	Low Signal Amp +	16	+5V Source 2
5	Ground	17	Not Used
6	Temp Input 1	18	Not Used
7	Temp Input 2	19	Pulse Input 4
8	4-20 mA Input 1	20	+5V Source 4
9	4-20 mA Input 2	21	Pulse Input 5
10	Battery Input	22	+5V Source 5
11	+5 Vdc Output	23	Ground
12	+12 Vdc Output	24	Ground

Pin	J7
1	Relay 1 Common
2	Relay 1 N/C
3	Relay 1 N/O
4	Relay 2 Common
5	Relay 2 N/C
6	Relay 2 N/O

Section 4: Powering Up

1. Power the WM8000 with a reliable and constant power source.
2. Turn the power switch on and observe that the *POWER LED* has illuminated.
3. The *SYSTEM LED* will illuminate after the device has registered on the wireless network. This can take up to 10 minutes. If the green system light does not come on, you may be in an area of no coverage.

NOTE: The device cannot be configured by the web-based software interface until the device has registered with the network.

Section 5: Analog Inputs

To monitor *any* analog input, you must configure the device as follows. First determine the analog voltage range and the type of inputs required. If the device is going to monitor temperature, current, or analog voltage, then configure SW-1 and SW-2 switch settings as shown in **Table 1** below.

Analog Inputs

The following steps must be followed for both Analog Inputs 1 and 2 (configured separately):

1. Remove plastic cap from SW-1 and SW-2. Sw-1 configures Analog Input 1. SW-2 configures Analog Input 2.
2. Determine setting using **Table 1** below.
3. Use a small screwdriver or a coin to turn switch pointer to desired setting.
4. Replace clear plastic caps to lock in place. Configuration is complete.

NOTE: The Analog LEDs will light if the voltage setting exceeds the range set by the switches.

Table 1: Switch Settings for Analog Inputs 1 & 2

SW Position	Configure Input to:
1	100 VDC
2	50 VDC
3	10 VDC
4	5 VDC
5	100 Ohm RTD
6	1000 Ohm RTD
7	10K Ohm RTD
8	Open
9	4-20 mA
10	Open
11	Open
12	Open

Section 6: Digital/Pulse Inputs

The WM-8000 has four digital inputs. There are no hardware configuration settings for the digital/pulse channels. Digital Inputs 1 and 2 are “capture ports.” These inputs will report events on a state change (e.g., on/off, open/closed, etc.). Digital Input 3 is not currently used. Digital Inputs 4 and 5 are pulse-logging ports and will accumulate or “totalize” input signals from pulse meter-type devices.

All digital inputs are active “high”. This means they require a positive voltage or source voltage to trigger an event. The J4 connector (terminal strip) contains source voltages for each digital input. Any voltage source input can be fed directly into the digital inputs with reference to device ground. When an I/O port has detected an event the appropriate LED will illuminate.

Section 7: Wiring the Inputs and Power

All wiring terminals can be accessed by removing the rectangular cover plate located on the bottom of the WM8000.The WM8000 can be powered with either AC (line) or DC (battery). For AC operation, refer to **Table 2**. For DC operation, connect the positive terminal (+) to Terminal 10 (J3) as shown in **Table 3**. Connect the negative terminal (-) to Terminal 5 (J3)

Table 2: AC Power Terminal Connector (J2)

Position	Function
ACN	AC Neutral
ACG	AC Ground (Earth)
ACL	AC Line

Monitored voltage and digital input wires must be connected to the appropriate terminal strip (J3 and J4). The upper connector (J3) is reserved for analog inputs. The lower connector (J4) is reserved for digital inputs. To connect analog inputs, refer to **Table 2**. To connect digital/pulse inputs, refer to **Table 3**. To connect relay outputs, refer to **Table 4**. For serial communications, refer to **Figure 2**.

Table 3: Analog Terminal Connectors (J3)

Position	Function
1	Voltage Input 1
2	Voltage Input 2
3	Low Signal Amplifier (+) (Optional)
4	Low Signal Amplifier (-) (Optional)
5	Ground
6	Temperature Input 1
7	Temperature Input 2
8	4-20 mA Input 1
9	4-20 mA Input 2
10	Battery Input
11	+5 VDC Output (1A)
12	+12 VDC Out (2A)

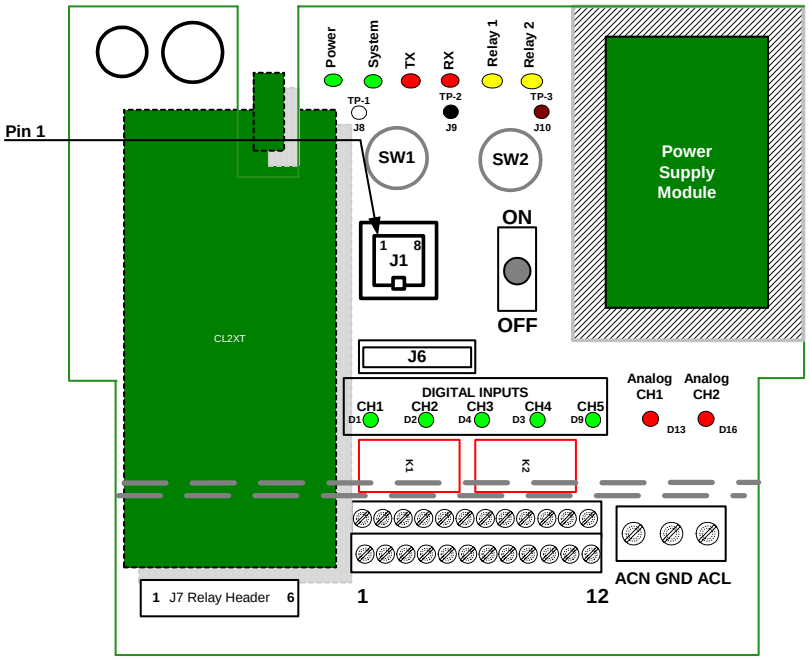
Table 4: Digital Terminal Connectors (J4)

Position	Function
13	Capture Input 1
14	+5V Source 1
15	Capture Input 2
16	+5V Source 2
17	not used
18	not used
19	Pulse Input 4
20	+5V Source 4
21	Pulse Input 5
22	+5V Source 5
23	Ground
24	Ground

Table 5: Relay Output Connectors (J6)

Position	Function
1	Relay 1 Common
2	Relay 1 Normally Closed
3	Relay 1 Normally Open
4	Relay 2 Common
5	Relay 2 Normally Closed
6	Relay 2 Normally Open

Figure 2: Data Port J1 Configuration



RJ-45 Pinout

Pin 1	Charge Pump RS-232 TX
Pin 2	Charge Pump RS-232 RX
Pin 3	GND
Pin 4	RS-232 RX
Pin 5	RS-232 TX
Pin 6	TTL-TX
Pin 7	TTL-RX
Pin 8	I/O-4

DB-9	RJ-45
Pin 2	Pin 5
Pin 3	Pin 4
Pin 5	Pin 3