

WM-001

# Weather Station

Installation and Owner's Manual



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## **Features**

The WM-001 Weather Station is a full suite of sensors packaged in a single convenient module. Included are the following sensors: Air Temperature, Humidity, Air Pressure, and Compass. The output of the WM-001 can be read by any VMS model, which then provides all those readings, plus Barometric Pressure and Altimeter (both based on Air Pressure), Heat Index (based on Temperature and Humidity), and a calibrated 72-point compass reading.

The WM-001 enables several new screens on the VMS monitor. The precise layout of these screens vary somewhat from model to model, and are summarized here. Each screen is activated by pressing the indicated key. In some cases the key must be pressed more than once to reach the particular screen.

### *VMS 200 EL*

**DRIVE** Additional "Drive Screen" with Compass. This screen also allows you to use the knob to adjust the compass bearing, thus compensating for the magnetic deviation from true north.

**SPEC** Weather Data - Temperature, Altitude, Barometer, Heat Index, Humidity, Moon Phase. This screen also allows you to adjust the altimeter reading by turning the knob. Pressing CLEAR resets the altimeter to near sea level.

**DIAG** Calibration and Diagnostic Screen. This screen allows calibration of the individual sensors.

### *VMS 320 EL*

**DRIVE** Places a Compass in the place of the trip information. Turning the knob allows you to adjust the heading.

**SPEC** Weather Data - Temperature, Altitude, Barometer, Heat Index, Humidity, Moon Phase. Turning the knob allows you to adjust the altimeter, while pressing CLEAR resets the altimeter to near sea level. This screen also has a hidden page which allows you to calibrate the sensors. Press the knob to reach the calibration screen.

### *VMS II*

**SPEC** Weather Data / Compass. Pressing the knob switches the display from Compass to Altimeter. The other weather sensors are always displayed. While the compass is displayed you can use the knob to adjust the heading. While the altimeter is displayed you can adjust the altimeter reading with the knob.

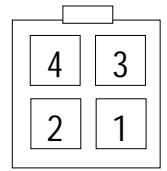
**Hidden** A "hidden" screen provides access to the sensor calibration. See the VMS II manual for instructions on reaching the hidden screens.

## **Mounting**

The WM-001 is only as effective as its location allows it. When looking for a mounting spot, consider the following:

1. The compass needs to be fairly level to read accurately.
2. The compass should be isolated from electric fields, particularly those that change. For example, mounting the compass near the headlight wiring will cause the compass to move when the lights are turned on or off.
3. Avoid direct sunlight.
4. The more air flow, the more accurate the temperature and humidity readings will be.
5. Avoid excessive exposure to moisture such as road spray or direct rain.

In most cases the best location will be somewhere under the coach, forward of the front axle, or in a well ventilated compartment.

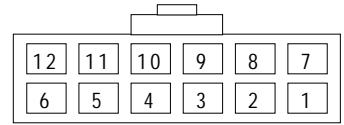


Wire Side View

## Wiring

The WM-001 uses less than 100 mA of 12 volt power, and should be powered from the same circuit as the VMS, if possible. Pin 1 is the Power lead, Pin 2 is the Ground lead. If you are using a pigtail from SilverLeaf, Red will be Power, Black will be Ground.

There are two data wires, which can be used to connect several VMS peripherals and accessories. The data wires are identified as "Data +" and "Data -", and connections are made "+" to "+" and "-" to "-". On the WM-001, "Data +" is Pin 3, located above the Power lead, and "Data -" is Pin 4, directly over the Ground lead. For the VMS 200, "Data +" is Pin 9, "Data -" is Pin 10. If there are already accessories attached to these VMS pins, simply splice into the existing wiring.



Wire Side View

On the VMS II, a secondary connector with two pins is located next to the main five pin connector. The top lead is "Data +", the bottom lead is "Data -".

Model	Version
VMS 120	20RV01
VMS II	20RV09
VMS 200	21RV01
VMS 320	21RV00

## Software

A VMS manufactured before WM-001 development was complete will not have the necessary software installed. These units must be updated, either by the SilverLeaf factory or a trained technician using SilverLeaf's reprogramming tools. The sidebar indicates the software versions that are the first for each product with the WM-001 support.

Check your VMS documentation for instructions on reading the software version number.

## Configuring the VMS™

The first step in configuring the VMS is setting the VMS to recognize the presence of the WM-001. This is done through the "hidden" VMS Configuration screen, detailed in the VMS manual. Once configured, the VMS must be reset, and the WM-001 can then be calibrated.

The WM-001 sensors are calibrated at the SilverLeaf factory, and should require no adjustment in the field. The VMS allows you to recalibrate the sensors as you desire, to compensate for the mounting and to deal with sensor drift over time. The only calibrations required are the following.

The compass requires the following calibrations. First, if the unit was installed upside-down, the readouts must be "flipped". Second, the compass must be driven in a full circle, to allow it to analyze and filter out the ambient magnetic fields in the coach. These functions are both accessed through the calibration screens mentioned in the first section. Finally, the compass heading must be adjusted for its mounting position and the deviation of magnetic North. This is done from the normal compass screen, and since the deviation from magnetic North varies across the country, it may have to be repeated occasionally as you travel.

The Altimeter must also be adjusted regularly as the weather changes while you drive. Normally changes in air pressure are assumed to be altitude changes if the coach is moving, and

barometer changes if the coach is stationary. As you drive through changing weather, of course, the altimeter will lose its accuracy and need to be reset. This is done using the knob on the standard altimeter screen.

## ***Warranty***

The obligation of SilverLeaf Electronics, Inc. under this warranty shall be limited to repair or replacement (at our option) during the warranty period of any part which proves defective in material or workmanship under normal installation, use, and service, provided the product is returned to SilverLeaf Electronics, Inc.. The warranty period shall be one year from date of purchase of the product, or purchase of the finished coach with the product installed.

This warranty shall be invalid if the product is damaged as a result of defacement, misuse, abuse, neglect, accident, destruction, alteration, improper electrical voltages or currents, repair or maintenance by any party other than SilverLeaf Electronics Inc. or an authorized service facility, or any use violative of instructions furnished by us.

This one-year warranty is in lieu of all other expressed warranties, obligations, or liabilities. Any implied warranties, obligations, or liabilities, including but not limited to the implied warranties of merchantability and fitness for a particular purpose, shall be limited in duration to the one-year duration of this written limited warranty.

In no event shall SilverLeaf Electronics, Inc. be liable for any special, incidental, or consequential damages for breach of this or any other warranty, expressed or implied, whatsoever.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.



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