



VG-METER 200

Soil Moisture Meter

The VG-METER-200 is a low cost hand held soil moisture meter with a professional digital display.

This a break through soil moisture meter is for professionals, but is in the price range that any home gardener afford it.

Not only does it provide accurate readings of soil moisture content it also displays the current ambient temperature, and has a light sensor which detects and displays the level of light.

This meter uses our break through [VH400 soil moisture sensor](#), and presents soil moisture results as a simple percentage (VWC). Light is also returned as a simple to understand percentage, where 0% is dark, and 100% is full sunlight. The VH400 sensor is included and integrated into the meter.

The temperature displayed is the ambient temperature measured at the hand held unit. The meter can be figured to display either Celsius or Fahrenheit. The temperature sensor can be calibrated for even greater accuracy.

The meter displays the current time. All measurements including the time can be displayed on the data display screen, or they may be individually disabled.

Probes come standard with a 1 meter cable. The probe is waterproof, and about 5 inches long. Because it is slender it can be used to measure soil moisture in potted plants, as well as the ground. Because it uses a capacitive based VH400 probe, it never corrodes, is insensitive to soil salinity, and gives very precise readings.



The hand held enclosure is small enough to fit in a pocket, and has in-molded rubber side grips for a comfortable grip.

It runs on 2 AA batteries and because it is so low power, the batteries should last for years, with normal use.

The meter comes in two varieties, one with a USB interface and one without. The version with the USB interface, can stream data to a computer through most communication programs such as Windows Hyperterminal. The USB version comes with a mini-USB cable.

The meter makes the perfect gift for any avid gardener.

Digital Soil Moisture Meter Applications

- Irrigation and sprinkler systems.
- Moisture monitoring of bulk foods.
- Rain and weather monitoring.
- Environmental monitoring.
- Water conservation applications.
- Fluid level measurements.

Digital Soil Moisture Meter Features

- Low cost.
- Includes integrated VH400 soil moisture sensor.
- Graphical digital display, with LED back light.
- Displays moisture, ambient air temperature, and light levels, and displays time.
- Easy to use.
- Pocket sized.
- Not conductivity based, and insensitive to salinity.
- Probe does not corrode over time.
- Rugged design for long term use.
- Batteries last for years with normal use.
- Precise measurement.
- Measures volumetric water content (VWC).
- The probe can be buried and is water proof.
- Because the probe is slender, it can also be used in smaller house plants without disrupting roots.
- The USB version can be stream data to a PC, and recieve firmware upgrades.

Soil Moisture Meter Specifications

VG-METER-200	
Batteries	2 AA
Dimensions	Enclosure: 2.5cm x 6.4cm x 94 cm (1in x 2.5in x 3.7in)



Operational Temperature	-20°C to 85°C
Baud Rate	9600, 8 bits, No Parity, 1 stop bits
Sample output rate (USB version)	1 sample/second

Soil Moisture Meter Operating Manual

To turn the unit on, press the center button.

To scroll up and down through the menu, use the up and down buttons.

To return to the previous menu without saving data, use the left button.

To return to the previous menu and save data, use the center button.

To modify data on a data input screen use the up and down keys.

The meter has the following menu items available:

- Display
 - On time before sleeping - Set the number of minutes for the display to stay on before sleeping. Set to zero for always on.
 - Backlight LEDs (On/Off) - Turns on or off the display back lights.
 - Battery Voltage - Displays the current battery voltage.
- Moisture
 - Show - Show or disable the moisture level on the main screen.
 - VWC/Volts - Express the soil moisture reading in VWC (Volumetric Water Content) or in sensor Volts.
- Light
 - Show - Show or disable the light level on the main screen.
- Temperature
 - Show - Show or disable the temperature on the main screen.
 - Units - Express the Temperature in Celsius or Fahrenheit.
 - Calibrate - Set an Celsius offset or multiplier to fine tune the temperature reading. Note that the calibration coefficients are in Celsius not Fahrenheit. There are two coefficients that you can adjust: a multiplier and an offset. The multiplier coefficient is factory set to 1.00. The offset coefficient, the second number which is preceded with + is normally what you will use to adjust the temperature. We set this coefficient to an approximate temperature. To adjust it use the up and down keys, for each digit. For example, if the current temperature that is displayed on the meter is too high by 1C, then you should lower the coefficient by 1.
- Time



- Show - Show or disable the current time on the main screen.
- Set Time - Set the current time.

USB Commands for USB enabled Soil Moisture Meter

The Logger doesn't come with any software. A serial communications program must be used to access the logger. We recommend Windows HyperTerminal or [Real Term](#) which is shareware. We only provide technical support if you are using HyperTerminal or Real Term. HyperTerminal comes preinstalled on all XP and legacy Windows computers.

The Meter may be configured, controlled and monitored by using the following commands.

Open Windows HyperTerminal - Normally under Start/Programs/Accessories/Communications in Windows.

Set up the session for the appropriate USB/comm port. Set the comm port setting to:9600 baud, 8-N-1. Set Hardware Flow Control to: none.

The easiest way to figure out, which comm port number the USB board is being referenced as, is to plug it in and look at the list, then remove it and see which comm port disappears from the list. You can also use the windows Hardware manager, and look at the ports under the ports branch of the tree. As you plug the USB device in and out, you will see it be displayed with its COMM port number.

When properly connected data will be displayed in the following format:

Moisture, VWC, light, %, time

0,VWC,3,%, 27,C,12:18:03 P

0,VWC,3,%, 27,C,12:18:03 P

0,VWC,3,%, 26,C,12:18:04 P

0,VWC,3,%, 27,C,12:18:04 P

Make sure that the meter is turned on, by pressing the center button, otherwise the data will not stream.

For a volts reading via USB, use the keypad to put the unit in volts mode, as described above.

