

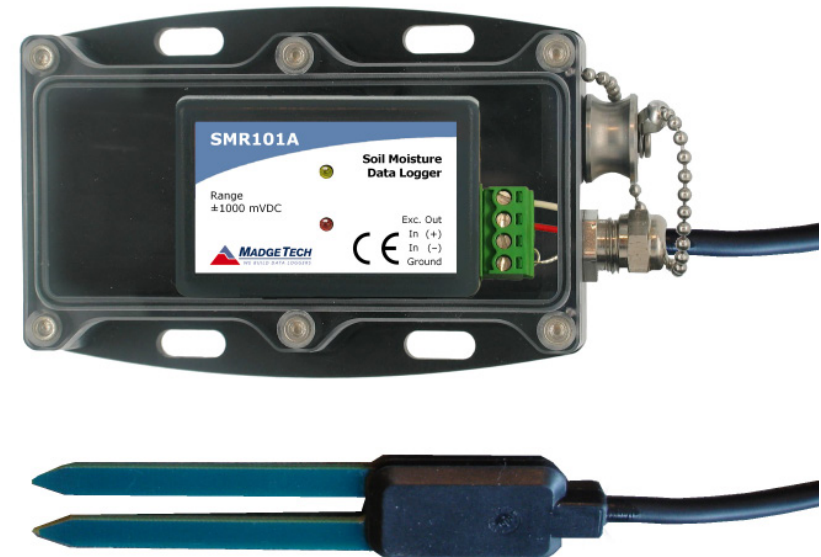
Part Number	SMR101A
Probe Range	0 to 100% VWC saturation
Probe Resolution	0.002m ³ /m ³
Probe Accuracy	±3% typical, ALL soils
Logger Accuracy	+0.01% FSR
Typical Battery Life	10 months typical at a 1 minute reading rate with a 350Ω load 2 years typical at a 1 minute reading rate with a 1000Ω load
Reading Rate	4Hz up to once every 24 hours
Memory	115,200
Required Interface Package	IFC200
Probe Life Expectancy	3-5 years
Logger Operating Environment	-40°C to +80°C (-40°F to +176°F) 0%RH to 95%RH non-condensing
Probe Operating Environment	-20°C to +50°C (-4°F to +122°F), 0%RH-100%RH
Logger Dimensions	1.4" x 2.5" x 0.6" (36mm x 64mm x 16mm)
Probe Dimensions	2.1" x 0.6" x 0.06" (55mm x 15mm x 1.5mm)
Cable Length	16' (5m) (Tinned, Wire Leads)
Approvals	—

Battery Warning

WARNING: FIRE, EXPLOSION, AND SEVERE BURN HAZARD. DO NOT SHORT CIRCUIT, CHARGE, FORCE OVER DISCHARGE, DISASSEMBLE, CRUSH, PENETRATE OR INCINERATE. BATTERY MAY LEAK OR EXPLODE IF HEATED ABOVE 80°C (176°F).

Specifications subject to change.

See MadgeTech's terms and conditions at www.madgetech.com



SMR101A

Soil Moisture Recorder with EC-5 probe

Product Notes

The SMR101A measures Volumetric Water Content (VWC) over a range of 0 to 100%. The system can be used in for most soil types as well as soil-less media with minimal salinity and textural effects.

EC Probe Soil Insertion

Refer to the “ECHO Probe Insertion Guide” application note on the MadgeTech website for instructions on how to insert the probe into the soil.

Calibrating Soil Moisture Probes

Refer to the “Calibrating ECH2O Soil Moisture Probes” application note on the MadgeTech website for information on how to calibrate the probe.

Additional Information

The following application notes can be downloaded from the website:

- Response of the ECH2O Soil Moisture Probe to variation in the water content, soil type, and solution electrical conductivity.
- Measuring water content in organic soils using ECH2O probe.

LEDs

- Green LED: every 10 seconds to indicate logging and 15 seconds to indicate delay start mode.
- Red LED: every 10 seconds to indicate low battery and/or memory and 1 seconds to indicate an alarm condition.

Multiple Start/Stop Mode Activation

To start device: Press and hold the pushbutton for 5 seconds, the green LED will flash during this time. The device has started logging.

To stop the device: Press and hold the pushbutton for 5 seconds, the red LED will flash during this time. The device has stopped logging.

Engineering Units Quick Reference

Unit Description	Unit Label	Offset	Gain
VWC	%	-0.0004	0.119
VWC	m3/m3	-0.0004	0.00119

Device Maintenance

Battery Replacement

Materials:

Small Phillips Head Screwdriver

3/32" HEX Driver

Replacement Battery (LTC-7PN)

- Remove the Data Logger from the Waterbox using the Allen Key.
- Puncture the center of the back label with the screw driver and unscrew the enclosure.
- Remove the battery by pulling it perpendicular to the circuit board.
- Insert the new battery into the terminals and then screw the enclosure back together.

Note: Be sure not to over tighten the screws or strip the threads.

Recalibration

The SMR101A system is based on strain measurement in mVs. The device is calibrated at 0 volts and 900-1000mV. If a more accurate calibration is desired, refer to the Calibrating ECH2O Soil Moisture Probes application note on the MadgeTech website.

Pricing:

Recalibration \$40.00

Additional Services:

As Found Data \$15.00 per parameter/channel

Verification Point \$15.00 per point

Prices and specifications subject to change. See MadgeTech's terms and conditions at www.madgetech.com. To send the devices back, visit www.madgetech.com, select Services then RMA Process.

Installation Guide

Installing the Interface cable

- IFC200

Insert the device into a USB port. The drivers will install automatically.

Installing the software

Insert the Software CD in the CD-ROM Drive. If the autorun does not appear, locate the drive on the computer and double click on Autorun.exe. Follow the onscreen instructions.

Connecting the data logger

- Once the software is installed and running, plug the interface cable into the data logger.
- Click the Communication Menu, then Auto Configure Port.
- After a moment, a box will appear stating a device has been found.
- Click **OK**. The **Device Status** box will appear. Click **OK**.
- At this point, communications have been configured for your logger. These settings can be found under the **Communication Menu**.

Note: For additional installation instructions refer to your “Data Logger & Software Operating Manual”.

Device Operation

Starting the data logger

- Click **Device Menu** then **Start Device**.
- Choose the desired start method.
- Choose the start parameters by selecting a **Reading Rate** suitable for your application.
- Enter in any other desired parameters and click **Start**.
- A box will appear stating the data logger has been started. Click **OK**.
- Disconnect the data logger from the interface cable and place it in the environment to measure.

Note: The device will stop recording data when the end of memory is reached or the device is stopped. At this point the device cannot be restarted until it has been re-armed by the computer.

Downloading data from a data logger

- Connect the data logger to the interface cable.
- Click the **Device Menu** then **Read Device Data**. This will offload all recorded data.