

# SMR101A

## SOIL MOISTURE DATA LOGGER



### Features

- High Accuracy Sensor
- Fast Response Time
- Simple Soil Insertion (Vertical or Horizontal)
- Weatherproof Enclosure
- No External Power Required
- Multiple Start/Stop Function
- Ultra High Speed Download
- 1 Million Reading Storage Capacity
- Memory Wrap
- Battery Life Indicator
- Optional Password Protection
- Programmable Alarm
- Field Upgradeable

### Benefits

- Simple Setup and Installation
- Minimal Long-Term Maintenance
- Long-Term Field Deployment

### Applications

- Irrigation Management
- Green House Monitoring
- Soil Moisture Trends
- Plant Growth Studies
- Peat Moss/Organic Soil Studies

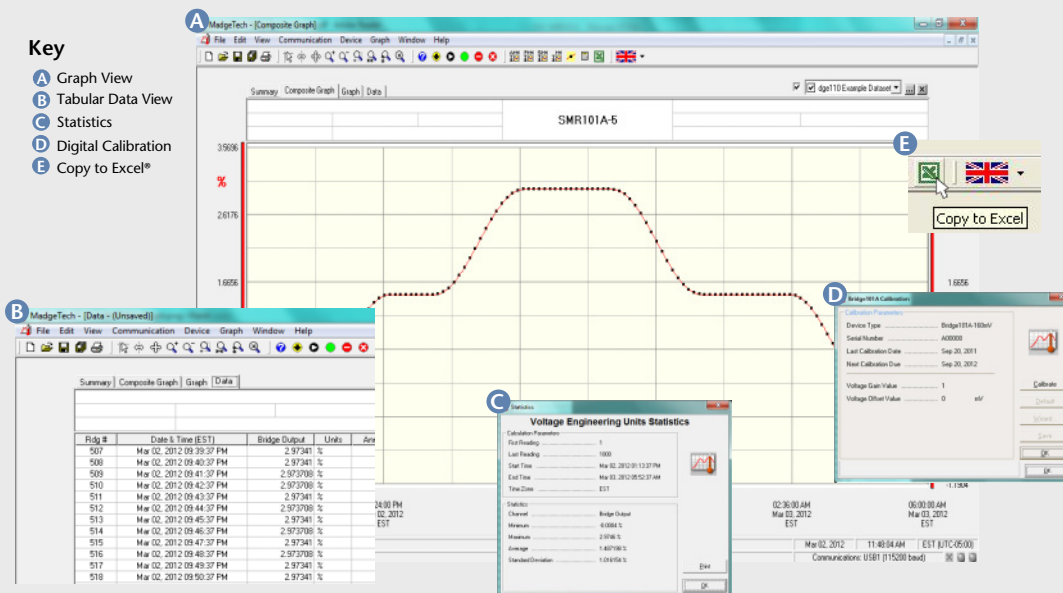
The SMR101A is a small, battery powered, soil moisture data logger in a weatherproof enclosure. It provides accurate volumetric water content measurements over a complete range from dry to saturated.

The SMR101A has a 10-year battery for long-term deployments and soil studies, over multiple seasons. It also features a 4Hz reading rate, a multiple start/stop function, ultra-high speed download capability, 1,000,000 reading storage capacity, optional memory wrap, battery life indicator, optional password protection, and more. The SMR101A comes with the EC-5, a high accuracy soil moisture probe (pictured above), with a response time of 10ms, that can be used in all soil types.

For easy soil moisture analysis and trend information, MadgeTech software provides a time and date stamped graph. This data may be viewed, printed or exported to third-party programs (Excel, etc...) for more detailed analysis and irrigation management. Soil moisture data is essential in determining and scheduling irrigation for proper plant growth, care and research. This data is also useful in determining the health of the soil and plant root systems.



## MADGETECH DATA LOGGER SOFTWARE



- ### Software Features:
- Multiple graph overlay
  - Statistics
  - Digital calibration
  - Zoom in/ zoom out
  - Full time zone support
  - Data annotation
  - Min./Max./Average lines
  - Data table view
  - Automatic report generation
  - Summary view
  - Multilingual

# SMR101A SPECIFICATIONS\*

## DATA LOGGER

**Measurement Range:** ±1200mV

**Accuracy:** ±0.01% FSR

**Input Range:** 0 to 2.5V DC

## PROBE

**Measurement Range:** 0 to 100% VWC saturation

**Measurement Type:** VWC (Volumetric Water Content)

**Measurement Accuracy:** ±3% typical, All soils ±1% with soil specific calibration

**Measurement Time:** 10ms

**Measurement Resolution:** 0.002m<sup>3</sup>/m<sup>3</sup>

**Life Expectancy:** 3-5 years

**Power Requirements:** Powered from the data logger's internal battery. No external power required.

## GENERAL

**Reading Rate:** 4Hz to 1 every 24 hours

**Memory:** 1,000,000 readings; software configurable memory wrap 330,000 readings in multiple start/stop

**Wrap Around:** Yes

**Start Modes:**

- Immediate start
- Delay start up to 24 months
- Multiple pushbutton start/stop

**Stop Modes:**

- Manual through software
- Timed (specific date and time)

**Multiple Start/Stop Mode:** Start and stop the device multiple times without having to download data or communicate with a PC

**Multiple Start/Stop Mode Activation:** To start the 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.

**Real Time Recording:** The device may be used with PC to monitor and record data in real-time

**LED Functionality:** Green LED blinks: 10 second rate to indicate logging, 15 second rate to indicate delay start

Red LED blinks: 10 second rate to indicate low battery and/or full memory, 1 second rate to indicate an alarm condition

## ORDERING INFORMATION

MODEL	DESCRIPTION	PRICE (U.S.)
SMR101A	Soil moisture data logger with EC-5 probe, and weatherproof enclosure	\$299.00
EC-5	Soil moisture probe, (ONLY)	\$130.00
IFC200	Software, manual and USB interface cable	\$119.00
LTC-7PN	Replacement battery for Bridge101A	\$10.00

ASK ABOUT  
OUR OTHER  
DATA  
LOGGERS

Temperature  
Humidity  
Pressure  
pH  
Level  
Shock  
LCD Display  
Pulse/Event/State  
Current  
Voltage  
Wireless  
Intrinsically Safe  
Spectral Vibration

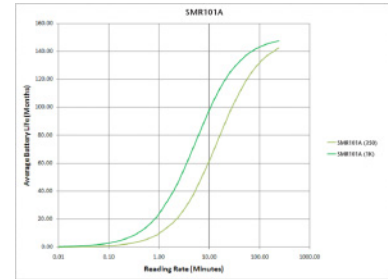
**Password Protection:** An optional password may be programmed into the device to restrict access to configuration options. Data may be read out without the password.

**Engineering Units:** Native measurement units can be scaled to display measurement units of another type. This is useful when monitoring voltage outputs from different types of sensors such as strain gauges and load cells.

**Battery Type:** 3.6V lithium battery included; user replaceable

**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



**Time Accuracy:** ±1 minute/month (at 20°C/68°F, stand alone data logging)

**Computer Interface:** USB (interface cable required); 115,200 baud

**Software:** XP SP3/Vista/Windows 7

**Operating Environment:** -20°C to +50°C (-4°F to +122°F), 0%RH to 95%RH non-condensing

**Dimensions:** Data Logger: 1.4" x 2.5" x 0.6" (36mm x 64mm x 16mm)

Probe: 2.1"x0.6"x0.06" (55mm x 15mm x 1.5mm)  
Cable length - 16' (5 m), (tinned, wire leads)

Waterbox:  
2.9" x 5.8" x 1.5" (74mm x 148mm x 39mm)

**Weight:** 7oz (198 g)

**Materials:** Data Logger: ABS Plastic  
Waterbox: Black Anodized Aluminum

**BATTERY WARNING:** FIRE, EXPLOSION, AND SEVERE BURN HAZARD. DO NOT RECHARGE, DISASSEMBLE, HEAT ABOVE 212°F, INCINERATE OR EXPOSE CONTENTS TO WATER.

\*SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE. SPECIFIC WARRANTY AND REMEDY LIMITATIONS APPLY. CALL 1-603-456-2011 OR GO TO WWW.MADGETECH.COM FOR DETAILS.