

# MAS-1 Soil Water Content Sensor

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The MAS-1 4-20 milliamp sensor is the first current-based sensor to use METER's trademark 70 MHz technology. This sensor offers a standard 4-20 milliamp output that is common with PLCs and irrigation controllers. With the 4-20 mA interface, cable lengths over 250 feet are possible.

## Research-grade accuracy

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The MAS-1 determines volumetric water content (VWC ) by measuring the dielectric constant of the media using capacitance/frequency domain technology. The sensor uses a 70 MHz frequency, which minimizes salinity and textural effects, making the MAS-1 accurate in almost any soil or soil-less media. Factory calibrations are included for mineral soils, potting soils, and rockwool.

## Low cost individual sensors for large sensor networks

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The MAS-1 delivers research-grade accuracy at a price that makes large sensor networks economically practical. You can adequately characterize your site with sensors at multiple depths and locations, even if you're on a tight budget.

California requires the following notice

WARNING: This product may contain chemicals including ethylene glycol, lead, nickel, styrene and cadmium, which are known to the State of California to cause cancer, birth defects or other reproductive harm. For more information, go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)



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## Specifications

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Interface	Standard 4-20 mA analog transmitter NOTE: Temperature measurement may not be accurate if sensor is not fully immersed in the medium of interest, due to excessively long equilibration time.
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Supply voltage	12-32 VDC continuous
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Output current	4 – 20 mA
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Overvoltage protection	Yes
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Settling time	4 seconds
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Wiring	Red Wire: (+) supply Black Wire: (-) output Shield: not connected
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Sensor type	Volumetric Water Content (VWC)
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Range	0-100% VWC typical
Resolution	Depends on current measurement (data acquisition) device
Accuracy	±6% VWC with generic calibration for supported growing media up to 65% VWC, above which accuracy lessens. Increased accuracy can be achieved with a medium-specific calibration.
Output	4-20 mA current proportional to VWC
Sensor measurement interval	1 second
Operating environment temperature	-40 to 60 °C NOTE: Sensors can be used at higher temperatures under some conditions. Contact METER for more details.
Physical properties dimensions	8.9 cm x 1.8 cm x 0.7 cm
Cable	2 m or 5 m, 3 wire (22 AWG tinned red and black wire, 24 AWG tinned bare wire); custom cable length available upon request.
Measurement volume	See <a href="#">comparison article</a>

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## Support

Have a question or problem? Our support team can help.

We manufacture, test, calibrate, and repair every instrument in house. Our scientists and technicians use the instruments every day in our product testing lab. No matter what your question is, we have someone who can help you answer it.