

Soil Water Potential Sensor

metergroup.com/environment/products/teros-21/



To say it's easy and affordable would be highly accurate

TEROS 21

Do not settle for less

When it comes to measuring water potential (or soil suction), it's difficult to find a device that will meet your every need. You're either forced to deal with lowered accuracy or high-maintenance hassles (not to mention getting soaked on cost). You wouldn't think taking such a simple reading would be so challenging.

Highly accurate. Yet low-maintenance and low-cost.

Put the tensiometer down. Pick up a TEROS 21. It's easier to use. It requires less maintenance, and it's accurate enough for most applications. Plus, it's surprisingly affordable, especially when you consider it measures across a lot wider range, including dry values. As one of our most broadly applicable sensors, you can use it in any soil condition.

Broad soil applications. Dependable accuracy.

To say TEROS 21 is more accurate than competitor sensors doesn't do it justice. That's because unlike competitor models, we calibrate each and every sensor for you. To do this, we use a chamber system that allows the TEROS 21 matric potential sensor to come to a fixed water potential. We put sensors in silica flour, and by controlling the water potential, we're able to set calibration points from -10 kPa to -80 kPa. The result: a long-term monitoring solution you can finally trust.

The only worry-free soil water potential sensor

Ease of use isn't something you normally associate with water potential device measurement. Until now. That's because TEROS 21 is plug and play in a number of ways. First, it has low salt sensitivity, so there's less worry about soil composition. And once it's in the ground, the durable epoxy coating ensures long-lasting usage. Second, no maintenance is involved. That means no re-digging to refill. No messing around with heating and wiring. And no figuring out how to produce a moisture release curve since the output is already in water potential. Lastly, TEROS 21 is also easy to integrate into systems (SDI-12 compatible) so it can be used with third party loggers. All this adds up to saving you time and a lot of unnecessary labor.

Spatial affordance

This is where you may expect to see a high price-point for all of the extra value we engineered into TEROS 21. Instead, we offer them at low-cost so you don't have to spend more money to get the measurement coverage you need. Not only do more sensors for the money make more sense, but because they use less energy and include a temperature sensor, you'll also be getting more value for your money. And it's all backed by 15 years of research.

Soil water measuring that's immeasurable in value

Accurate. Easy to use. Affordable. TEROS 21 outperforms in every aspect because we specifically designed it to save you time, hassle and money.

[Get pricing](#)

[Features](#) [Specifications](#) [Accessories](#) [Support / Downloads](#)

Features

- Easy to use
- Improved accuracy comes from the six-point factory calibration
- Tough, long-lasting body
- No recalibration
- Low salt sensitivity
- Affordability
- Excellent range (sensitivity from -9 kPa all the way to air dry [-100,000 kPa])
- Onboard temperature measurement
- Plug and play capability
- Use with the [EM60G](#) for remote access to data
- SDI-12 compatible

Specifications

| | |
|------------|--|
| Accuracy | Soil water potential: $\pm(10\% + 2 \text{ kPa})$ from -9 to -100 kPa; Soil temperature: $\pm 1 \text{ }^\circ\text{C}$ |
| Resolution | Soil water potential: 0.1 kPa Soil temperature: 0.1 $^\circ\text{C}$ |

| | |
|---------------------------|--|
| Range | Soil water potential: -9 to -100,000 kPa Soil temperature: -40 to 60 °C* *Sensors can be used at higher temperatures under some conditions |
| Measurement speed | 150 ms (milliseconds) |
| Equilibration time | 10 min to 1 hr depending on soil water potential |
| Sensor type | Frequency domain with calibrated ceramic discs, thermistor |
| Output | RS232 (TTL) with 3.6 volt levels or SDI-12 communication protocol |
| Operating environment | -40 to 60 °C |
| Power | 3.6 - 15 VDC, 0.03 mA quiescent, 10 mA max during 150 ms measurement |
| Cable | Sensors come standard with 5 m cable. Custom cable lengths available. Maximum cable length of 75 m. |
| Cable connectors type | 3.5 mm "stereo" plug or stripped and tinned lead wires (3) |
| Sensor dimensions | 9.6 cm (l) x 3.5 cm (w) x 1.5 cm (d) |
| Data logger compatibility | METER Em50/50G (rev 2.13+), EM60/60G , ProCheck (rev 1.53+), Campbell Scientific, any SDI-12-capable data logger |
| Warranty | One year, parts and labor |

Accessories



T8 TENSIO METER

Water Potential and Temperature



Splice Kit



Probe Adaptor Pigtail for CSI Data Loggers



Pigtail-to-Stereo Adaptor



10 Foot Extension Cable

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.

Email: support.environment@metergroup.com

Phone US: +1 509-332-5600

Phone Europe: +49 89 12 66 52 0

Downloads

[TEROS 21 Integration Guide PDF / 262.39 KB](#)

[TEROS 21 Manual PDF / 482.11 KB](#)

[TEROS 21 Quick Start PDF / 488.89 KB](#)

Related Products



ECH₂O 5TE

The 5TE's smaller size ensures fast, easy installation, and provides three measurements in one—bulk EC, VWC, and soil temperature.

[Learn more](#)

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EM60G

The EM60G is a plug-and-play data logger for environmental monitoring.

[Learn more](#)

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