



TEROS 21: SOIL WATER POTENTIAL SENSOR

DESCRIPTION

TEROS 21 water potential sensor is incredibly easy to use. It requires no maintenance, and it's accurate enough for most applications. In fact, the TEROS 21 provides an even more accurate soil moisture picture than measuring water content alone. A water content sensor only shows the percentage of water in the soil, but add a TEROS 21, and you'll know if that water is available to plants and where it will move. Plus, unlike water content, matric potential isn't dependent on soil type, so you can compare moisture between different sites. Not only that, the TEROS 21 is surprisingly affordable, especially when you consider it measures across a wide range, including dry values.



TEROS 21

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 ZL6 for remote access to data on the cloud
- SDI-12 compatible

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TEROS 21 is calibrated using a chamber system that allows the 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.

TEROS 21 is plug and play in a number of ways. First, once it's in the ground, the durable epoxy coating ensures long-lasting usage. Second, no maintenance is involved. That means no refilling. And no worrying about frozen conditions. Lastly, the TEROS 21 water potential sensor is also easy to integrate into systems (SDI-12 compatible) so it can be used with third-party loggers.

SPECIFICATIONS

MEASUREMENT SPECIFICATIONS	
Water potential	Range: -9 to -2,000 kPa (1.96 to 4.31 pF). Resolution: 0.1 kPa. Accuracy: ±(10% of reading + 2 kPa) from -100 to -9 kPa NOTE: TEROS 21 is not well calibrated beyond -100 kPa. For more information on using the TEROS 21 beyond this range, see Section 3.3.3 of user manual. NOTE: TEROS 21 sensors with serial numbers up to T21-00009999 have a water potential range of -9 to -100,000 kPa.
Dielectric measurement frequency	70 MHz
Temperature	Range: -40 to +60 °C. Resolution: 0.1 °C. Accuracy: ±1 °C
COMMUNICATION SPECIFICATIONS	
Output	RS-232 (TTL) with 3.6-V or SDI-12 communication protocol
Data logger compatibility	METER ZL6, EM60, and Em50 data loggers or any data acquisition system capable of 3.6- to 15-VDC power and serial or SDI-12 communication
PHYSICAL SPECIFICATIONS	
Dimensions	Length: 9.6 cm (3.8 in). Width: 3.5 cm (1.4 in). Height: 1.5 cm (0.6 in)
Sensor diameter	3.2 cm (1.3 in)
Operating temperature range	Minimum: -40 °C. Maximum: +60 °C NOTE: Sensors may be used at higher temperatures under certain conditions; contact Customer Support for assistance.
Cable length	5 m (standard). 75 m (maximum custom cable length) NOTE: Contact Customer Support if a nonstandard cable length is needed.
Connector types	3.5-mm stereo plug connector or stripped and tinned wires
ELECTRICAL AND TIMING SPECIFICATIONS	
Supply voltage (VCC to GND)	Minimum: 3.6 VDC. Maximum: 15.0 VDC
Digital input voltage (logic high)	Minimum: 2.8 V. Typical: 3.6 V. Maximum: 3.9 V
Digital input voltage (logic low)	Minimum: -0.3 V. Typical: 0.0 V. Maximum: 0.8 V
Power line slew rate	Minimum: 1.0 V/ms
Current drain (during measurement)	Minimum: 3.0 mA. Typical: 3.6 mA. Maximum: 10.0 mA
Current drain (while asleep)	Typical: 0.03 mA
Power-up time (DDI serial)	Maximum: 100 ms
Power-up time (SDI-12)	Minimum: 100 ms. Typical: 150 ms. Maximum: 200 ms
Measurement duration	Typical: 150 ms. Maximum: 200 ms
COMPLIANCE	Manufactured under ISO 9001:2015 EM ISO/IEC 17050:2010 (CE Mark)

Contact info



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