Eijkelkamp
Soil & Water

HydraProbe
Reliable soil insight

HydraProbe
What can it measure? The big three in soil science:

Why should you buy?

- Are you looking for a rugged soil moisture and salinity sensor for long term monitoring?
  - Continuous accuracy without calibration.
  - Accurate across different locations, soil types, moisture range and seasons
  - 5 year warranty and fully potted components
  - Compatible with any SDI-12 capable data logger - no setup required

- Do you want to measure
  - Soil moisture and temperature only? Choose HydraProbe Standard (art. no.: 142801)
  - Soil moisture, salinity and temperature? Go for HydraProbe Pro (art. no.: 142811)

- The science behind
  - Ratiometric Coaxial Impedance Dielectric Reflectometry
  - Measure the energy storage (real dielectric permittivity) and the energy losses (imaginary dielectric permittivity) separately
  - Rigorously peer reviewed by American Geophysical Union, Vadose Zone Journal and The Journal of Soil Science Society of America

How do you want to read out the data?

- Read out the data in the field via HydraGo app? Choose HydraGo (art.no.: 142820)
- Log the data in the field? The HydraProbe can be connected to any SDI-12 data logger.
- Access your data through email or our web portal (via telemetry)?
  Our GDT Prime Plus GPRS Eijkelkamp SIM (art. no.: 113403ES) can send the data from HydraProbe sensors directly to your email or web portal.

Meet the difference

Technical specifications

Measurement	Accuracy	Range
Real dielectric permittivity (isolated)	± ≤1.5% or 0.2 whichever is typically greater	1 to 80 where 1 = air, 80 = distilled water
Soil moisture for inorganic & mineral soil	± 0.01 WFV for most soils ± ≤0.03 max for fine textured soils*	From completely dry to fully saturated
Bulk electrical conductivity	± 2.0% or 0.02 S/m whichever is typically greater*	0.01 to 1.5 S/m
Temperature	± 0.3°C	-10° to +55°C
Inter-sensor variability	± 0.012 WFV (θ m^3 m^{-3})	n/a

* *Accuracy may vary with some soil textures.*

Electrical and communication	
Power supply	9-20 VDC
Power consumption	<1 mA idle / 10 mA active
Cable	3-wire: power, ground, data
Cable length	7.5 m (24.6 ft.)
Baud rate	1200
Communication protocol	SDI-12 Standard v. 1.2
Addressing	Serial; allows multiple sensors to be connected to any SDI-12 data logger via a single cable.

Environmental		Physical	
Operating temp.	• In soils: freezing to +55° C • Temperature probe range: -10°C to +55°C	Length	124 mm (4.9”)
Storage temp.	-40°C to +55°C	Diameter	42 mm (1.6”)
Water resistance	Tolerates continuous full immersion	Weight	200 g (7 oz.)
Cable	18 gauge (20 gauge for RS-485), UV resistant, direct burial	Cable weight	80g/m (0.86 oz/ft)
Vibration and shock resistance	Excellent; potted components in PVC housing and 304 grade stainless steel tines	Sensing volume (cylindrical region)	Length: 5.7 cm (2.2”) Diameter: 3.0 cm (1.2”)

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