Soil moisture and temperature sensor



- TDR (Time Domain Reflectrometry) technology
- Volumetric water content, soil temperature and conductibility measurements (only PRMPA1205)
- Very good accuracy on water content: < 2%
- Half meter cubic volume for water content definition
- Buriable to any depth

The ideal solution for the measurement of volumetric moisture in soils and other porous materials. The sensor is based on TDR technology (Time Domain Reflectometry), ensuring good accuracy even in very wet soil, and without special calibration for mineral soils. Using its rods, the sensor can be inserted in the material for 11 cm or fully buried.

Technical Specifications

PN	DQA340	PRMPA1205
Output	2X0...1 V	SDI-12
Measured quantities	Temperature (°C) Water content (%)	Temperature (°C) Water content (%) Conductivity (dS/m)
Data logger compatibility	E-Log Alpha-Log (using ALIEM module)	Alpha-Log

Common Technical Specifications

Moisture content	Principle	TDR (Time Domain Reflectometry)
	Measuring range	0...100% volumetric water content
	Accuracy	0...40%: ±2%; 40...70%: ±3%
	Repeatability	±0.3%
	Salinity error	<3% for 0...40%
	Sampled volume	0.25 l ± 110x50 mm diameter
Temperature	Measuring range	-40...70 °C
	Accuracy	± 0.5 °C relative
General Information	Power supply	7...24 V DC
	Power consumption	Sleep: 5 mA, Measuring: 175 mA @ 7 V DC
	Power-up time	3 s
	Operating temperature	-15...50 °C
	IP protection	Waterproof sealed PVC
	Cable	L=5 m
	Dimensions	Body: 155 x Ø32 mm. Rods: length: 110 mm

Accessories

	DQA340.2	Spare part electrode L=110 mm for DQA340

Soil moisture and temperature profile sensor



- Measurement of water content profile in 6 sections and soil temperature at 9 points in a single sensor
- High-precision TDT (Time Domain Transmission) technology with excellent long-term stability
- Quick and easy installation in a pre-drilled hole
- Robust sensor with no exposed sensitive parts
- Low power consumption
- Initial calibration made in fine sand

PRMPA120X is a multi-depth probe that accurately measures soil water content and temperature using TDT (Time Domain Transmission) technology. A single probe replaces multiple sensors, can be installed quickly without digging, and provides reliable data across the entire soil profile. Robust, with no exposed sensitive elements, low power consumption, and SDI-12 or RS485 output, is the ideal solution for monitoring soil at different depths.

Technical Specifications

PN	PRMPA1206	PRMPA1207	PRMPA1208	PRMPA1209
Output	SDI-12	RS485	SDI-12	RS485
Cable	L=5 m free wires		L=5 m + conn. for DWA5xx e DWA3xx	

Common Technical Specifications

Volumetric Water Content	Principle	TDT (Time Domain Transmission)
	Measuring range	0...100%
	Accuracy	±2%
	Precision	<0.2%
	Measuring segment number	6
	Measuring segment location	0-15; 15-30; 30-45; 45-60: 60-75; 75-90 cm from head
Temperature	Measuring range	-20...70 °C
	Accuracy	±0.5 °C
	Data point number	9
	Data point location	3.5; 10; 20; 30; 40; 45; 60; 75; 90 cm from head
	Power supply	6...14 V DC (max 18 V DC)
	Power consumption	• Sleep: <0.5mA • Measuring: 15-25 mA for 100 ms per segment
	Power-up time	<1 s
	Operative temperature	-20...70 °C
	Material	Polycarbonate
	Dimensions / Weight	L=90 cm / P=720 g
	Data logger compatibility	Alpha-Log

Soil moisture and temperature sensor



- Designed to be installed in mineral soils, many types of growing media, and other porous materials
- Accurate tool for monitoring volumetric water content (VWC)
- Capacitance/frequency-domain technology
- 70-MHz frequency, which minimizes textural and salinity effects, making the sensor accurate in most mineral soils

PRMPA1202 is the ideal solution for the measurement of volumetric water content in mineral soils and other porous materials. The sensor is based on Capacitance/frequency-domain technology ensuring good accuracy even in very wet soil, and without special calibration for mineral soils. Using its rods, the sensor can be inserted in the material for 5.5 cm or fully buried.

Technical Specifications

PN	PRMPA1202	
Volumetric Water Content	Principle	FDR (Frequency Domain Reflectometry) / Capacitance
	Measuring range	Mineral soil calibration: 0. 0.7 m^3/m^3 Soilless media calibration: 0. 1.0 m^3/m^3
	Accuracy	• Generic calibration: ±0.03 m^3/m^3 typical in mineral soils that have solution EC <8 dS/m • Medium specific calibration: ±0.01...0.02 m^3/m^3 in any porous medium
	Dielectric Measurement Frequency	70 MHz
	Resolution	0.001 m^3 /m^3
Temperature	Measuring range	-40...60 °C
	Accuracy	±1 °C @ −40...0 °C; ±0.5 °C @ 0...60 °C
General Information	Power supply	4...15 V DC
	Power consumption	• Sleep: 0.03 mA • Measuring: 16 mA
	Power-up time	245 ms
	Output	SDI-12
	Operating temperature	-40...60°C
	Protection grade	IP68
	Cable	L=5 m
	Dimensions	Length: 9.4 cm; Width: 2.4 cm; Height: 7.5 cm; Needle: 5.5 cm
	Data logger compatibility	Alpha-Log

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