

FULL RANGE TENSIO-METER FRT 15D

POLYMER TENSIO-METER WITH A WIDE MEASURING RANGE AND SOIL TEMPERATURE

The FRT 15D Full Range Tensiometer measures soil water tension directly as pressure, as well as soil temperature. With a measurement range up to 1,500 kPa (4.2 pF), it covers the entire range of soil water tension relevant to plants. The polymer tensiometer responds quickly to changes in water potential and automatically resumes measurement across the entire range even after drying out—without the need for refilling.

APPLICATIONS

- Remote monitoring sites with limited power supply thanks to low energy consumption
- Long-term stationary measurements with the FRT requiring minimal maintenance
- Reliable data transmission over longer distances via RS485/Modbus, even in measurement environments with an increased risk of electromagnetic interference

ACCESSORIES

- FRT Transport sleeve (strongly recommended)
- Stainless-steel pre-drill with a conical profile for easy installation of the tensiometer in the soil and to ensure optimal soil contact with the ceramic component; available in large and small sizes (for lysimeters)
- Standpipe extension (customizable)
- Connection cable (Lengths can be customized)
- 4-pin connector on the connection cable
- Data logger / NB-IoT box



Transport sleeve



Pre-drill

TECHNICAL DATA

PARAMETERS FRT 15D	SPECIFICATIONS
Dimension	Ø 25 mm, length 150 mm (possible extension up to 1000 mm)
Measuring tip	cylindrical
Measurement range tension	-100 ... +1500 kPa accuracy across the measurement range: ±35 kPa, Temperature range during calibration: 4 ... 30 °C (at 100% water saturation)
Measurement range temperature	0 ... +40 °C accuracy ± 0.2%, resolution 0.01 °C between 0 and +40 °
Thread for standpipe extension	M22x1,5
POWER SUPPLY / INTERFACE	
Power consumption	6 mA; peak current up to 10 mA for short periods; typical measurement duration 10 s
Supply voltage	5 ... 30 V
Output signal	RS485 (Modbus)
Cable length	5 m potted
APPLICATION RANGE	
Operating temperature	+1 ... +40 °C (ambient soil temperature)
Possible pH value in operation	pH 5 ... pH 9

PARAMETERS FOR FRT ACCESSORIES	SPECIFICATIONS
TRANSPORT SLEEVE	
Dimensions	Ø25 x 65 mm
Material	soft PVC
PRE-DRILL LARGE	
Drill groove	Ø 12 mm, length 500 mm
Diameter	Ø 25 mm solid bar
Length without / with impact head	580 mm / 630 mm (extension possible)
Reinforced impact head, screw-on shaft	Ø 40mm x 50mm
Material	special steel alloy
Steel handle with PVC grip	Ø 16 mm x 400 mm
PRE-DRILL SMALL	
Drill groove	Ø 12 mm, length 130 mm (extension possible)
Diameter	Ø 25 mm solid bar
Material	special steel alloy
Features	threaded connection for the handle or extensions