



EMS Brno

Data Acquisition Environment
Hardware – Software – Cloud application
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Soil water potential set with datalogger MicroLog SP3

Main features:

- Small datalogger MicroLog SP3 with three Gypsum block or Watermark sensors intended for soil water potential measurement
- Built-in datalogger temperature sensor
- Infrared wireless data access
- Water sealed case
- Long lasting lithium battery



Datalogger MicroLog SP3



Delmhorst GB sensor



Specifications:

- A.C. resistance 0 to 35 kOhm
- SWP range up to -1.44 MPa
- Overall accuracy better than 2%
- Internal temperature accuracy ± 0.3 °C
- Fully watertight – IP 68 rating
- Non-volatile memory, typically 100,000 readings
- Operating range:
 - Temperature from -40 to 60 °C
 - Relative humidity from 0 to 100 %
- Configuration and data processing fully supported by Mini32 software

Watermark sensor



MicroLog SP3

MicroLog SP3 is a small three-channel water-sealed datalogger designed for the resistance measurement. It uses square wave symmetrical alternating current. Datalogger is intended for the measurement of soil water potential with sensors which electrical conductivity is related to soil water potential (Delmhorst gypsum block, Watermark sensor). The temperature of the datalogger is measured for the estimation of the soil or an ambient temperature.

The datalogger case is watertight, made from high-density polyethylene terephthalate (PETE) allowing its long-term leaving in soil.

The non-volatile data memory can store typically 100,000 measured values what is enough for more than 1.5 year of storing of all measured variables in hourly intervals (3 x soil water potential, 1 x internal temperature).

Specification

Measuring range	0 to 35 kOhm (0 to -1.44 MPa)
Accuracy	better than 0.5 % of reading over the whole temperature range
Measuring signal frequency	160 Hz
Measuring current (kept constant)	33 μ A
Measuring signal wave form	square wave, symmetrical
Clock accuracy (-10 to 40 °C)	better than ± 15 sec/month
Memory size	256 kB
Resolution	16 bits
Measuring intervals	10 min to 4 hrs
Storing intervals	10 min to 4 hrs
Memory capacity with measuring interval 1 hr	ca 1.5 years
Battery lifetime with measuring interval 1 hr	ca 2 years
Datalogger internal temperature accuracy	± 0.3 °C
Sensor connection	2-pin Switchcraft EN3 P2 connector female
Standard sensor length	1.5 m (Watermark) 1.8 or 7.6 m (Delmhorst)
Protection rating	IP68
Size (diameter x length)	70 x 52 mm (incl. connectors)
Weight (incl. battery)	110 g
Operating environment temperature	-40 to 60 °C
Operating environment humidity	0 to 100%
Battery	SAFT LS14250CNA

Software: Mini32 universal software is running under Windows® 7, 8 and 10. The software assures all necessary operations – system setup, data downloading and processing. Its data processing part is made for work with large and long-time data series. It offers exceptionally sophisticated visualization and data manipulation, it includes basic statistic features, creates and prints graphs and exports data to different file formats.