TOMST®

TMS

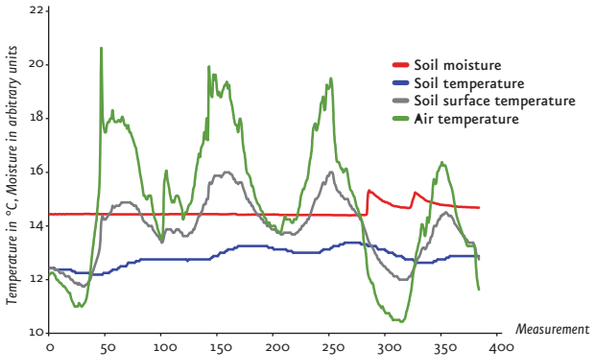
TOMST® Measuring System

Technical details:

1. Temperature measured using temperature sensor MAXIM/DALLAS Semiconductor DS7505U+, with resolution of 0.0625 °C and with accuracy of ±0.5 °C.
2. The moisture sensor measures slowing down of a signal with changes in the permeability of the environment at a frequency of 100-200MHz. This method is largely independent of salinity and temperature. The measuring error in a similar environment does not exceed 1%.
3. Capacity of the data loggers is 32MBit, i.e. up to 500 000 values can be stored. Real time measured using a crystal of 32.768 kHz, with the accuracy of ±2 min./month.
4. Battery - 2x lithium battery CR123A with a capacity 3V/1300mAh. When measuring every half an hour, the battery will last for at least 10 years.

The company TOMST® has operated on the market since 1995. Main activities of the company concern research, development and production of electronic equipment based on the iButton® Technology of the company MAXIM/DALLAS.
The TOMST® production process concentrates on two principal products:
System TLD™ – *access control system* and
System PES® – *guard-tour control system*.
The main strength of the products is worldwide unique system of detection of attempts to destroy the PES® sensors – the ANTI-VANDAL® Technology.
TOMST® offers to its customers the development and production of individual control systems adjusted to their individual requirements. For its activity and excellent results the company TOMST® has also obtained many international awards.

2nd generation



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Course of temperature and soil moisture over 4 days measured every 30 minutes.

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Over 1000 loggers of the 1st generation tested in the field since summer 2009 in the Czech Republic and Switzerland, Europe.

The TMS dataloggers have a wide range of applications for **research** in the fields of biology, ecology, soil sciences, hydrology, climatology etc. It can also be used in **agriculture, horticulture and forestry** – monitoring growing conditions in the field, greenhouse, growth chambers etc.
Other possible applications include monitoring conditions in **grain stores** and any other places where it is important to monitor the course of moisture and temperature.
Currently, we have wide experience with their use in a range of field conditions within several research projects of the Academy of Sciences of the Czech Republic and University of Bern, Switzerland, Europe - studies of climatic inversion in deep sandstone valleys, monitoring soil moisture and temperatures in wet meadows, sandy habitats and mountain forests. It is also used for identification of optimal growth conditions at Energy Plantations. Currently running is calibration of the moisture logger to real soil moisture values.

TMS dataloggers for measuring air and soil temperature and soil moisture

Need to measure air and soil temperature and soil moisture in many locations over extended time periods?

TMS dataloggers:

- Offer unique possibility to measure soil and air temperature and soil moisture in any extreme conditions.
- Single measuring units are completely autonomous - can collect and store data for over 10 years without battery replacement and data extraction *(up to 500 000 events ~ ~ 10 years of measurements every 10 minutes).*
- No need of any additional special equipment - single measuring units are physically independent. The data will be stored in the logger even when e.g. moved by wild animals.
- Data are easily extracted with a device of the size of a small cell phone in a minute.
- High precision of measurements, insensitive to soil conditions.
- Offers the possibility of added external sensor allowing measurements in any distance/height from the central logger or remote data download when buried in depth underground.
- Offers other flexible applications as requested.
- Based on long term previous experience of TOMST® with construction of PES sensors for monitoring guard patrols and on previously tested loggers in a range of field conditions by the Academy of Sciences of the Czech Republic and University of Bern, Switzerland, Europe.
- Are cheap compared to other commercial dataloggers and thus allow measurements over large spatial scales.

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