

DZN1 自动土壤水分观测仪

概述

DZN1 自动土壤水分观测仪是应用 FDR 原理的土壤水分测量传感器和总线式数据采集技术于一体的土壤水分自动化测量系统，其技术指标符合中国气象局土壤水分观测仪的设计要求。该系统由传感器、采集器、通信接口和系统电源四部分组成，根据业务需要可配备微机，可显示实时和整点土壤相对湿度、体积含水量、重量含水率、贮水量等动态变化曲线并自动生成标准数据文件。可根据用户需要接入 1~8 个土壤水分传感器或张力计测量土壤水分或水势。

该仪器可广泛应用于气象、生态、农业、地质灾害等领域的探测与研究。



主要功能及特点

- ☆ 实时自动采集土壤剖面各层的土壤水分数据；
- ☆ 可存储至少 60 天数据，掉电不丢失；
- ☆ 可处理、查询、实时显示数据及动态变化曲线；
- ☆ 工作性能稳定、可靠性高、便于维修；
- ☆ 防雷及抗干扰能力强。

主要技术指标

能够测量我国各气候区内壤土、黑土、褐土、钙土、风沙土、灌淤土等主要土壤类型。具体指标如下：

1. 测量范围：0~100%土壤体积含水量；
2. 系统分辨力：1‰
3. 测量精度：

土壤体积含水量在	0~40%范围，	误差 $\leq \pm 2\%$ ；
土壤体积含水量在	40~100%范围，	误差 $\leq \pm 3\%$ ；
4. 土壤温度变化范围：-40~+80℃；

DZN1 Automatic Soil Moisture Observation Instrument

Summary

DZN1 (automatic soil moisture observation instrument) is an automatic soil moisture measurement system which gathers soil moisture sensor utilize of FDR principle and bus data acquisition technology. The product specifications of this sensor confirm to the China Meteorological Administration(CMA) soil moisture observation requirements. This system consists of the sensor, collector, communication port and power supply. According to user's needs, it can be equipped with microcomputer, then it will display real-time data and the hour of relative humidity, volumetric water content, gravimetric moisture content, water storage. And generate a standard file automatically. The instrument can be widely used in the meteorology, ecology, agriculture, geological disasters or other fields.



Main functions and features

- ☆real-time automatic acquisition of soil moisture data for each layer of the soil
- ☆data storage for 60 days at least, power down without losing
- ☆it can handle, query, display real-time and dynamic curves
- ☆stable performance, high reliability, easy to repair and maintenance
- ☆lightning protection and strong anti-interference ability

Product Specifications:

It can measure loam soil, black soil, cinnamon soil, calcium soil, wind sandy soil, anthropogenic alluvial soil and other main types soil in every China's climate zone. Specific indicators are as follows:

- 1、 Measuring range: 0~100% soil volumetric water content
- 2、 System resolution: 1‰
- 3、 Measuring accuracy:
error $\leq \pm 2\%$ (when soil volumetric water content is in 0~40%);
error $\leq \pm 3\%$ (when soil volumetric water content is in 40~100%);
- 4、 soil temperature range: -40~+80℃;