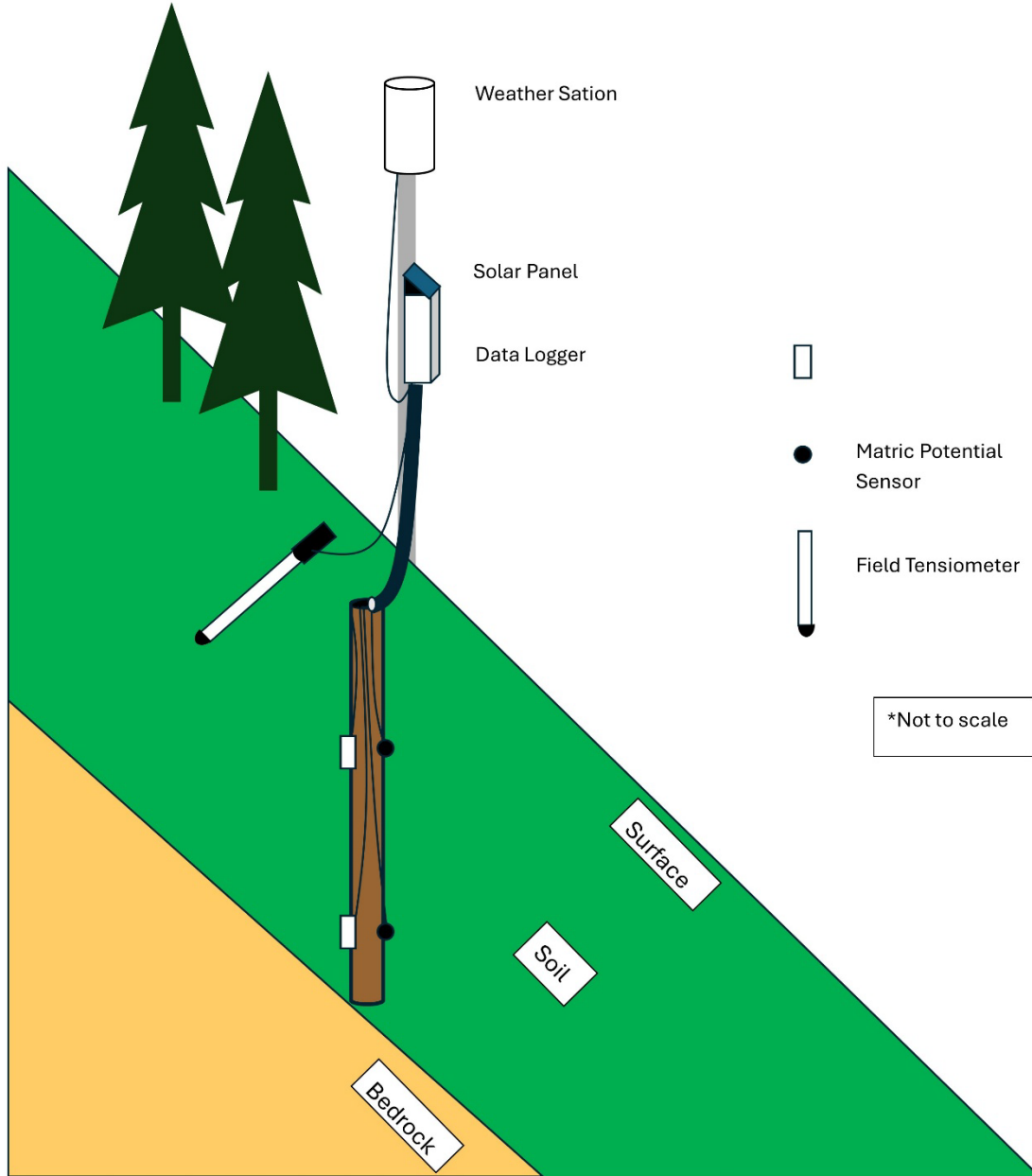


KGS Slope Hydrologic Monitoring Sensor Specifications



This document describes the basic specifications for our network sensors and data collection. The KGS Slope Hydrologic Network uses instrumentation from [METER Group](#). For more information, visit the links provide for each sensor. For questions contact the KGS Landslide and Engineering Geology Team <https://kygs.uky.edu/research/landslides/>.

Soil Moisture Sensors



The **TEROS 21 Soil Water (Matrix) Potential** sensors measure a full range of water potential with a range of -8 to $-100,000$ kPa. The accuracy is \pm (10% of reading + 2 kPa) from -100 to -5 kPa. The sensors also measure soil temperature.



The **TEROS 12 Volumetric Water Content** sensors measure soil moisture between 0.0 – 0.70 m^3/m^3 with ± 0.03 accuracy in typical mineral soils. The sensors also measure soil temperature and bulk electrical conductivity.



TEROS 32 Field Tensiometer measures field water potential from a range of -85 to $+85$ kPa with an accuracy of ± 0.15 kPa. When water potential is measured below -85 kPa, the sensor is refilled with distilled water for continual measurements. The TEROS 32 are installed at 5 sites in the network.

Weather Station



[ATMOS 41 Gen 2 Weather Station](#) is an all-in-one weather station that records 12 different weather variables including precipitation, solar radiation, electrical conductivity, relative humidity, wind speed, air temperature, vapor pressure, barometric pressure, wind gusts, horizontal wind speed, wind direction, and lightning strikes. The precipitation gauge has a range of 0-1500 mm/hr with a resolution of .17 mm and an accuracy of +/-5% of measurements from 0 to 1000 mm/hr.

Data Logger



All sensors are directly connected to the [ZL6 Data Logger](#). The ZL6 logger is programmed to collect and manage cloud-based data delivery. The ZL6 uses [ZENTRA Cloud](#) to deliver near real time data through cellular or Wi-Fi networks. The ZL6 has an integrated solar charging panel contains 6 different ports for up to 6 sensors. When sunlight is limited, alkaline AA batteries can be used to charge the logger.