AgWeatherNet Standard Instruments

Standard and extended sensors installed at AgWeatherNet station locations:

Air Temperature and Relative Humidity

Model 107 Temperature Probe:
This durable and versatile probe measures air, soil, or water temperature from -35°C to 50°C with a ±0.2°C tolerance over the 0° to 50°C range.

Rotronic HC2S3 Temperature and Relative Humidity Probe:
This rugged and accurate temperature and humidity probe measures air temperature from -40°C to 60°C with a ±0.1°C tolerance at 23°.

PC72V Relative Humidity and Temperature Transmitter Digital:
This probe is designed for the measurement of temperature from -40 to 60°C with an accuracy of ±0.2°C at 23°C and relative humidity from 0 to 100% RH with an accuracy of ±2% RH at 23°C.

Soil Temperature and Moisture

Model 107 Temperature Probe:
This durable and versatile probe measures air, soil, or water temperature from -35°C to 50°C with a ±0.2°C tolerance over the 0° to 50°C range.

CS655 Soil Water Content Reflectometer:
This multiparameter smart sensor that uses innovative techniques to monitor soil volumetric-water content, bulk electrical conductivity, and temperature. Volumetric Water Content is estimated using the Topp Equation for a range of 5% to 50% with a ±3% accuracy and a precision of < 0.05%.

Wind

Model 014A Met One Wind Speed Sensor:
This three-cup anemometer is designed for coninuous operation in adverse conditions and monitors wind speed from 0 to 45 m/s with an accuracy of 0.11 m/s and a starting threshold of 0.45 m/s.

Model 024A Met One Wind Direction Sensor:
Wind direction is measured by this wind vane from 0 to 360 degrees with a 5 degree accuracy specification.

Leaf Wetness

237 Leaf Wetness Sensor:
Electrical resistance on the surface of this sensor is used to measure leaf wetness.

Rainfall

Rain Gauge Tipping Bucket TR-525I Rainfall Sensor:
This remote tipping bucket rain gauge measures 0.2 mm of liquid precipitation for every bucket tip, with an accuracy of 1.0% up to 50 mm/hr. As water is collected, the tipping bucket fills to the point where it tips over and empties in preparation for additional measurements.

Solar Radiation

CS300 Pyranometer:
This sensor uses a silicon photovoltaic detector mounted in a cosine-corrected head to measure 0 to 2000 W/m^2 of sun plus sky radiation in the spectral range of 300 to 1000 nanometers, which encompasses most of the shortwave radiation that reaches the surface of the Earth.

Air Pressure

CS106 Barometric Pressure Sensor:
This barometric pressure sensor measures from 500 to 1100 mb with an accuracy of ±1.5 mb from -40° to 60°C using Vaisala's BAROCAP silicon capacitive sensor.