



Overview

The WXT520, manufactured by Vaisala, is a solid-state, all-in-one weather instrument that measures wind speed and direction, precipitation, barometric pressure, temperature, and relative humidity. Its small size makes it ideal for quick,

short-term deployments. However, the WXT520 is not intended for weather stations that require research-grade performance.

Benefits and Features

- › Low maintenance—no moving parts significantly reduces maintenance cost and time
- › Compact and lightweight
- › Low power consumption
- › Fast and simple to install
- › Outputs an SDI-12 signal that can be measured by many of our dataloggers
- › Combines the six most essential weather parameters in one instrument

Technical Description

The WXT520's wind sensor consists of three equally spaced transducers that produce ultrasonic signals. Wind speed and direction are determined by measuring the time it takes for the ultrasonic signal of one transducer to travel to the other transducers.

Precipitation is measured one raindrop at a time. Whenever a raindrop hits the precipitation sensor, an electrical signal is produced that is proportional to the volume of the drop.

The WXT520 has a PTU module that contains a capacitive silicon BAROCAP® sensor for barometric pressure measurements, a capacitive ceramic THERMOCAP® sensor for air temperature measurements, and a capacitive thin film polymer HUMICAP® sensor for relative humidity measurements. The PTU is housed in a naturally-aspirated radiation shield that protects it and reflects solar radiation.

Specifications

Electromagnetic
Compatibility

Complies with EMC standard
EN61326-1

IEC Standards

IEC 60945/61000-4-4, IEC
60945/61000-4-2



Input Voltage	5 to 30 Vdc
	Below 5.3 V, the measurement performance for high wind speeds may be degraded.
Typical Current Drain @ 12 Vdc	<ul style="list-style-type: none"> › 3 mA (Default Measuring Intervals) › 0.1 mA (SDI-12 standby)
Output	SDI-12
Operating Temperature Range	-52° to +60°C
Storage Temperature Range	-60° to +70°C
Operating Relative Humidity	0 to 100% RH
Diameter	11.5 cm (4.52 in.)
Height	23.8 cm (9.38 in.)
Weight	650 g (1.43 lb)

Air Temperature

Measurement Range	-52° to +60°C
Accuracy	±0.3°C (@ +20°C)
Output Resolution	0.1°C

Barometric Pressure

Measurement Range	600 to 1100 hPa
Accuracy	<ul style="list-style-type: none"> › ±1 hPa (@ -52° to +60°C) › ±0.5 hPa (@ 0° to 30°C)
Output Resolution	0.1 hPa

Relative Humidity

Measurement Range	0 to 100% RH
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Accuracy	<ul style="list-style-type: none"> › ±3% RH (@ 0 to 90% RH) › ±5% RH (@ 90 to 100% RH)
Output Resolution	0.1% RH

Wind Speed

Measurement Range	0 to 60 m s ⁻¹
Response Time	0.25 s
Accuracy	<ul style="list-style-type: none"> › ±0.3 m s⁻¹ or ±3% whichever is greater (0 to 35 m s⁻¹) › ±5% (36 to 60 m s⁻¹)

Wind Direction

Measurement Range	0° to 360°
Response Time	0.25 s
Accuracy	±3°
Output Resolution	1°

Precipitation

Rainfall Measurement	Cumulative accumulation after latest automatic or manual reset
Collecting Area	60 cm ² (9.3 in. ²)
Output Resolution	0.01 mm (0.001 in.)
Field Accuracy for Daily Accumulation	Better than 5% (weather dependent; does not include possible wind induced error)
Rain Duration	Counting each 10-s increment whenever droplet detected
Rain Intensity	1-min. running average in 10-s steps
Rain Intensity Range	0 to 200 mm h ⁻¹ (broader range possible with reduced accuracy)

For comprehensive details, visit: www.campbellsci.eu/wxt520 



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