

Vaisala Wind Tower System WTS250

Cold Climate Measurement System with Fully Heated Mechanical Wind Sensors



Features / Benefits

- System is designed specifically to monitor wind conditions in cold climates
- Fully heated mechanical wind speed and direction sensors – heating in cups, vane, sensor bodies and bearings
- Measnet calibrated Vaisala WAA252 mechanical wind sensor
- Powerful data logger to collect and store information
- Continuity of data, especially if system is equipped with Vaisala's ultrasonic wind sensor WMT700 at the top measurement level
- Service package managed by Vaisala where weather experts are monitoring your data, not a third party
- System is flexible and can be customized to meet your needs with additional sensors or services

Overview

The Vaisala WTS250 measurement system is the new standard for monitoring wind conditions in harsh, cold climates, and/or where icing occurs frequently during the winter season. Its fully heated sensors have proven their performance and reliability in the most demanding environments around the world.

Vaisala's core expertise is weather measurement. We research, design, develop and manufacture weather sensors and have extensive experience designing and testing sensors for use in snow and ice conditions and extreme temperatures. We have applications in a variety of industries where having accurate, continuous weather data is critical in order to properly plan and keep operations running smooth. These applications include Energy transmission, Airports, and Roadway maintenance.

A Complete and Reliable Measurement System

The WTS250 utilizes Vaisala's fully

heated WAA252 mechanical wind sensors. These sensors are designed for harsh climates, providing the best data results possible during icing conditions. The WAA252 mechanical wind sensor is Measnet calibrated and contains heating in the cups, sensor bodies and bearings, allowing you to receive continuous wind speed data. The wind sensor can be considered a Class 1 sensor, based on its design, aerodynamics and specifications. The WTS 250 system also includes:

- Sensor booms and supports for lattice towers
- All necessary cabling
- Data logger for collecting measurements
- Your option of 1, 2 or 3 measurement levels for 60, 80 or 100 meter towers
- Vaisala's combined air temperature and relative humidity sensor at the top measurement level
- Precision barometric pressure sensor
- Lightning surge protection

With the WTS250 system you also have the option to add Vaisala's WMT700 ultrasonic wind sensor at the top measurement level. Using both sensor technologies will allow you to fill in data gaps, and receive as much continuous wind measurement data as possible, no matter how extreme the weather gets.

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Heating of the system requires mains power to operate effectively in cold conditions, or customer-supplied stand alone power can be utilized.

Convenient Access to Your Measurement Data

Vaisala's WTS system collects, stores and transmits data utilizing a fully digital design, which minimizes interference and results in a continuous data set. Extensive quality checks in the sensors and data logger

ensure high quality data. Vaisala's powerful data logger reads the signals from the sensors and stores the data in internal memory for later download to a computer. A 2GB CF-memory card able to store up to 1 year of 10 minute wind data and other observations is standard with the WTS250 system.

Wind and weather data is transmitted from the site to either Vaisala for managing, or directly to the customer. Data transfer from the site to your office is easy using a flash memory

to collect data directly from the site, or through GPRS cellular service remotely.

Vaisala Service

Service packages from Vaisala help you manage data collection, full system monitoring, and data display. We can collect, host, monitor, inspect and distribute the data according your needs. Two standard service packages are available, or we can customize a service package to meet your needs.

System Components	Equipment	Specifications	Description
Wind	WAA252	WAA252 range is 0.4 to 75 m/s WAA252 accuracy is ± 0.5 m/s WAA252 Measnet calibrated accuracy is ± 0.1 m/s (4 to 16 m/s)	WAA: High performance cup anemometer for measurement of wind speed (Measnet calibrated)
	WAV252	WAV252 range is 0 to 360° WAV252 accuracy is better than $\pm 3^\circ$	WAV: Wind vane for measurement of wind direction
Relative humidity, temperature, dew point	HMP110	Relative humidity range is 0 to 100% ($\pm 2\%$) Temperature range is -40°C to $+80^\circ\text{C}$ ($\pm 0.2^\circ\text{C}$) Dew point range is -40°C to $+80^\circ\text{C}$	Humidity and temperature probe
Barometric pressure	BARO-1QML	Pressure range is 500 to 1100 hPa, ± 0.2 hPa	Barometric pressure sensor
Automatic Weather Station	WTE301	QML201C data logger, 4-band GSM/GPRS modem, external 24VDC power supply required Power consumption, measurement system: 0.4A (12VDC, 3 level system) Heater power consumption: 15A (24VDC, 3 level system) Internal batteries 52Ah (12VDC, estimated 11 days backup for measurement)	Integrated automatic weather station in one compact enclosure. All external wiring uses connectors for easy installation.
Optional components	WMT702	WMT702 range is 0 to 65 m/s and 0 to 360° WMT700 Measnet calibrated accuracy is better than ± 0.1 m/s (4 to 16 m/s)	Ultrasonic wind sensor
	Metek uSonic-3 Basic	3D ultrasonic wind sensor, range ± 50 m/s three axis	3D ultrasonic wind sensor
	HMP155	0 to 100% Relative Humidity, -80 to $+60^\circ\text{C}$ for temperature	Humidity and temperature probe
	CMP3	300 to 2800 nm / 0 to 2000 W/m ² Power supply and telemetry options available upon request	Solar radiation sensor (pyranometer)

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