



# Weather Stations in Kleve

## Interactive Dashboards of Real-Time Weather Data

WeatherStation Obstbaum-Arboretum	WeatherStation Rathaus
	
Fig.: Interactive real-time data plots. <b>Click on the image</b> or <a href="#">here</a> to open the Grafana dashboard.	Fig.: Interactive real-time data plots. <b>Click on the image</b> or <a href="#">here</a> to open the Grafana dashboard.

## Weather-Station Obstbaum-Arboretum

The weather station consists of a Vaisala WXT536 multisensor, which can measure wind speed, wind direction, barometric pressure, air temperature, relative humidity and rainfall. Global radiation is measured by a Kipp & Zonen CMP3 pyranometer. A raspberry pi zero is used to read the data from the weather station. From there the data is uploaded to a server running an influx database. The internet connection is provided by a [Teltonica router](#) using LTE. A LoRaWAN Gateway is installed next to the station to provide access to The Things Network in the park.











Fig.: First Test in the IOT-Lab with a USB-Connection

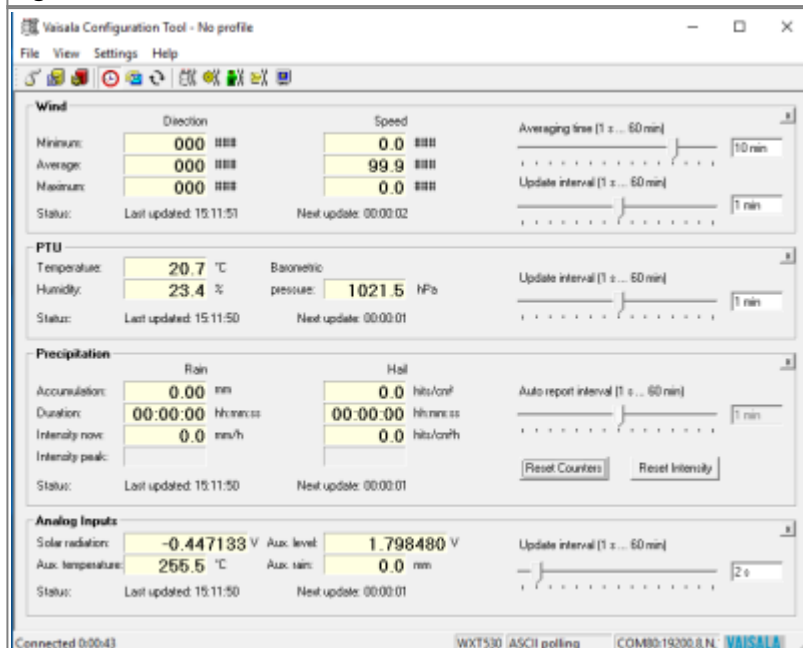


Fig.: Reading the Data with the Vaisala Configuration Tool

## RS485

To read the Data from the WXT536 Module we connected an rs485 to USB converter. This protocol will be used when the weather station is permanently installed in Kleve. The WXT536 accepts a voltage range from 6-24V, so we had to connect an external power supply.



Fig.: Connecting to the WXT536 with an rs485 to USB converter

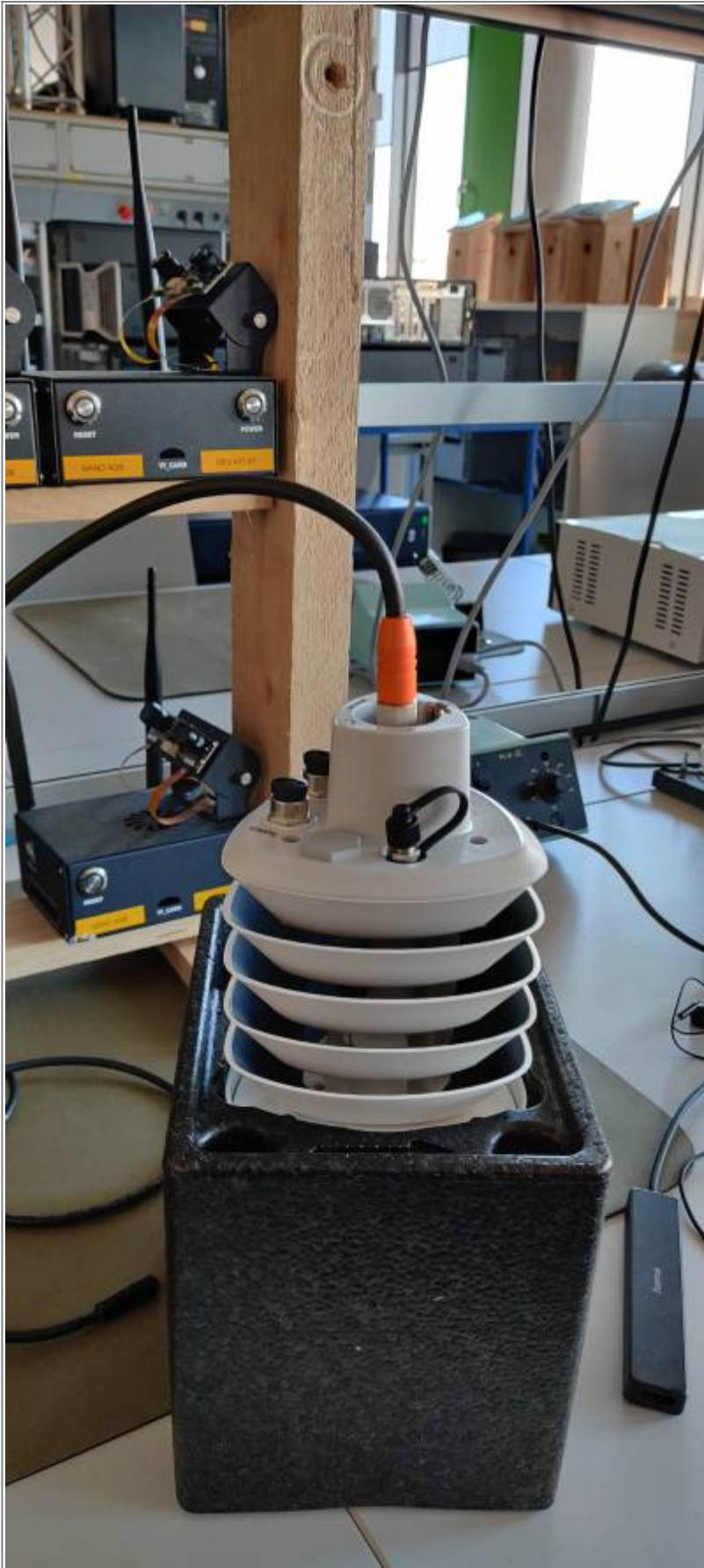


Fig.: Connecting to the WXT536 with an rs485 to USB converter

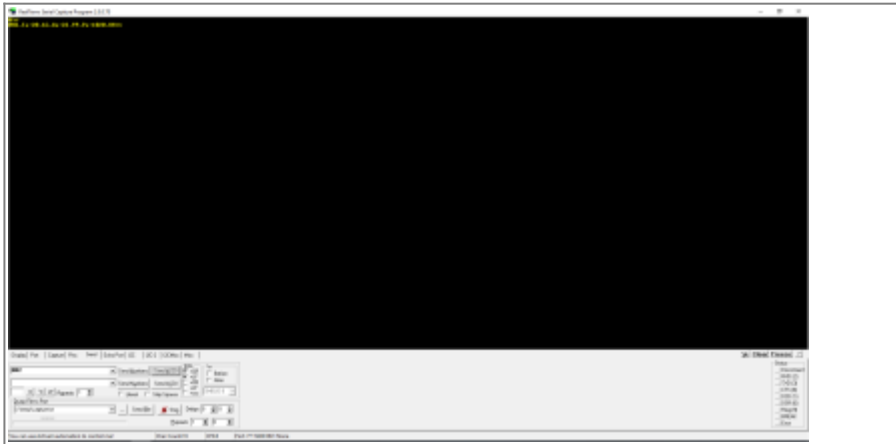


Fig.: Serial response from the WXT536 after sending a data request

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