CASE STUDY:

Project METEOLAB

Station Ilirska Bistrica-Trnovo

Providing weather data for visitors and the interested public in Slovenia

OVERVIEW: METEOLAB WEB SERVICE

The Meteolab web service's main goal is to extend data from the Ilirska Bistrica-Trnovo meteorological station to the public in a consumable way. Trnovo is a settlement in the town of Ilirska Bistrica in southwestern Slovenia. The service allows interested members of the public to monitor detailed current and historic weather data and access local or national forecasts. As the Ilirska Bistrica-Trnovo station continues to grow, they are continually adding new and innovative sensors to provide better, more accurate measurements.

Learn more at www.meteolab.si

Special challenges

1. MEASURING LARGE AMOUNTS OF PRECIPITATION

The field of precipitation measurement is very complex and dynamic. Furthermore, Slovenia experiences large amounts of precipitation on an annual basis, necessitating high-accuracy measurement. In the past, it was extremely challenging to measure downpours, heavy daily precipitation and also precipitation accompanied by strong winds.

2. DETECTING EXTREMELY LIGHT PRECIPITATION

Lambrecht's old 1518 H3 rain gauge was well suited to detect large amounts of precipitation. This rain gauge, however, was not designed to detect extremely light precipitation. Station Ilirska Bistrica-Trnovo required a more sensitive gauge to improve accuracy and data quality.

CHALLENGE

Precipitation intensity (the amount of precipitation expressed in millimeters per time unit) varies enormously in the area surrounding Ilirska Bistrica. They required a rain gauge that could measure all precipitation intensities, from a light drizzle to heavy rain, with high accuracy.

SOLUTION

Meteolab has adopted the **rain[e]H3** heated precipitation sensor. Now, precipitation data, along with other weather data from the automatic meteorological station, can be processed and provided to the public on the Meteolab website with ease.

> "I have been acquainted with the Lambrecht sensors for a very long time, but I first encountered them around 2010, when I was donated a 1518 H3 sensor by DWD [the German Weather Service]. I love the robustness, build and functionality that Lambrecht sensors offer. This is mainly reflected in the reliability and long service life of the sensors.
>
> **— Saša Zidar**
> **IT Specialist, Hobby Meteorologist**

Solution: Using the rain[e]H3 weighing precipitation sensor

Accurate measurement of precipitation parameters is the starting point of any weather monitoring solution. It's also a complex task due to varying precipitation intensities and the way climate change is affecting weather systems.

RELIABLE AND FAST MEASUREMENT

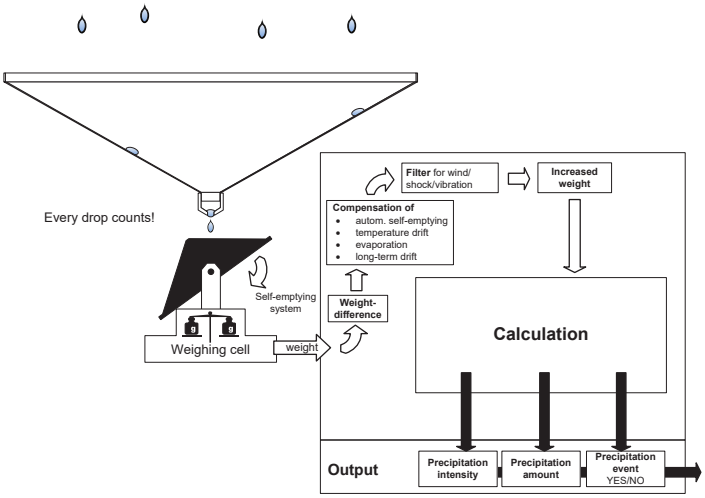
rain[e]H3 is a compact rain gauge with a sensitive measuring principle that combines the advantages of weighing and collecting precipitation sensors. The continuously self-draining collecting system enables real-time measurement of every single drop with the high resolution of 0.001 mm/m² and prevents false measurements. The heating system ensures unattended year-round operation.

HIGH DEMANDS FULFILLED

The rain[e]H3 sensors meets the stringent requirements of the WMO and the German Weather Service (DWD). They are used at all DWD stations with automatic precipitation measurement.
The rain[e] series can be used universally with all common data loggers and data acquisition systems.

How does the rain[e]H3 work?

The precipitation is collected by the funnel with its standardized collecting area. Solid precipitation, such as snow, is melted by the intelligent heating. The collected precipitation passes the funnel through the drop former and ends in the self-emptying collecting system, where the drop is immediately weighed. The system measures weight increases compared to the previous measurement, not absolute weight, to accurately measure precipitation, even when intensity varies. Due to the high sampling rate, the long-term drift of the weighing cell and evaporation are compensated almost automatically. Once one of the chambers is filled, the collecting device tips over, empties itself, and measurement continues in the second chamber.



WHY AEM?

Lambrecht meteo, an AEM brand, develops and manufactures world-class meteorological sensors and measurement solutions for wind, precipitation, pressure, temperature, and humidity serving various classical meteorological and highly specific environmental and industrial end-markets. Our highest goal is to deliver state-of-the-art sensors and customer-friendly complete measurement solutions including data acquisition, maintenance, and service. With our products and the portfolio of the AEM family of innovative brands, we aim to be a globally established brand and to provide a wide range of meteorological applications with flexible and high-quality solutions for our customers' weather measurement tasks.