Customer Application

rotronic
MEASUREMENT SOLUTIONS

AIR HUMIDITY AND TEMPERATURE UNDER CONTROL

The largest archaeological museum in Switzerland – the Laténium in Neuchâtel – stores more than half a million artefacts from the Neanderthal era to the Renaissance. The worst enemy of all these ancient relics: variations in air humidity and temperature! The museum, which is not air-conditioned, has used probes to monitor the climate on its premises since 2001. Since they were outdated, they were replaced with Rotronic probes – ultra-precise "high-tech spies" that are connected to special software to enable control of all glass cabinets, exhibition rooms and storage areas. In other words, perfectly monitored energy efficiency.

Christian Cevey can connect directly to the climate control software from the permanent exhibition.

The Laténium, the largest archaeological museum in Switzerland, houses 524,450 objects ranging from the Neanderthal era to the Renaissance. Lying on the shores of Lake Neuchâtel, dotted in times past with stilt houses, a building with a total area of 6,600 square meters was built to accommodate the collections. As the direct successor of a long-established institution, the Canton Museum for Archaeology, the Laténium has presented about 50,000 years of regional history in a universal perspective "midway" between the Mediterranean and the North Sea since 2001.

Deeply embedded in the region

Why is this the biggest museum in Switzerland? "There has been a strong focus on archaeology in the region for 150 years. Extensive research work, beginning back in 1964, has been carried out along the motorway starting from the municipalities of Auvernier and Saint-Blaise," says director Marc-Antoine Kaeser.

The laboratory for dating wooden artefacts (dendrochronology) enables exact dating.

The wireless RMS logger, presented by Christian Cevey.

The museum is affiliated to the Cantonal Bureau for the Preservation of Historical Monuments and Archaeology. Around 40 people work in this building in cooperation with universities. Equipped with ultra-modern museography, it has been awarded the Council of Europe Museum Prize. Archives with documents, photos, old pieces of glass, ancient manuscripts, pottery, marble, flintstone, bronze, iron and even various organic materials are stored here. The name of the museum is derived from La Tène, a Celtic culture that prevailed throughout Europe, from Ireland to Turkey, from 450 to 50 BC. The museum's treasures, however, also cover older epochs (from the Paleolithic nomads and stilt buildings of the Neolithic Age to the Bronze Age) and younger ones (Gallo-Roman civilization and the Middle Ages: objects of wood, fabrics, basketry and wickerwork, etc.).

"Thanks to the RMS software, the Laténium has a complete overview of the probe locations and can guarantee optimum control."

Christian Cevey
Head of the Laboratory for Conservation & Restoration
Department for Justice, Security and Culture

All measured data under control with RMS

The Rotronic Monitoring System (RMS) is a modular system of hardware elements and web-based software. It provides maximum flexibility in installation and ensures readily available data. The data loggers record measurements from Rotronic and third-party sensors and transmit them to the secure database. It stores information and makes it available to users, regardless of whether they access the database via a PC, Mac, tablet or smartphone.

Main features:

- Compatible with GMP / GLP / GDP
- FDA 21 CFR Part 11
- PDF report with charts and statistics
- Alarm by voice call, SMS or email
- Platform-independent
- Also suitable for smartphones and tablets

RMS Video
Interested?
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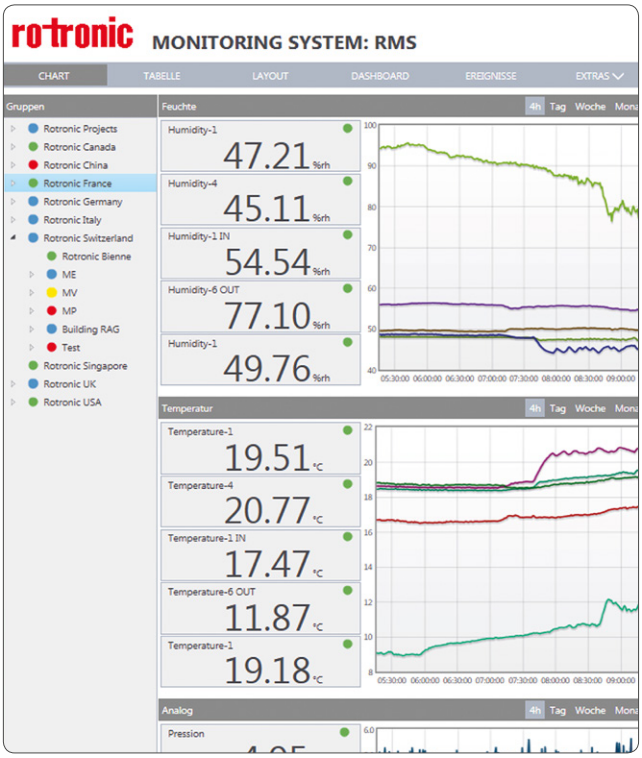
Christian Cevey tops up water in the glass cabinet directly to adjust the relative air humidity.



An RMS network guarantees optimum control.

Stopping deterioration in the laboratory

How can you preserve the artefacts? “Finding an archaeological object is a real miracle. You remove it from its surroundings and keep it somewhere under good conditions,” says Christian Cevey, head of the Laténium’s Laboratory for Conservation and Restoration. The museum does, however, worry a little. Like in us humans, chemical processes lead in the course of time to a certain decay of the objects: “They are destroyed more or less quickly. It is the job of our laboratory to stop this destruction. And climate plays an important role in this.” If the artefacts are not stored under perfect conditions, their condition can deteriorate very quickly in spite of restoration measures. All organic materials must, for example, be stored at a relative air humidity of about 50 %.

The Laténium actually has two laboratories: one in which wood artefacts are dated (dendrochronology) and which provides specialized services valued throughout the region. And, of course, the Laboratory for Conservation and Restoration.

50% air humidity necessary

What are the benefits of Rotronic probes? Organic components are particularly sensitive to climate as these materials can tear as a result of variations in the climate. “We try to stabilize the objects at a relative air humidity of 50 %. In this regard you should, however, know that our museum, which has been awarded the Minergie label, is not air-conditioned,” says Christian Cevey. The management therefore decided to air-condition every glass cabinet in the museum housing archaeological objects separately and to add the necessary humidity. In this way the climate is kept at the required humidity level with the help of cartridges containing a buffer material. “Using the special RMS software (Rotronic Monitoring System) from Rotronic, I can control the complete museum from my computer screen. The computer application generates charts for a year (or an hour, a day, a week) so that I get a better overview compared to the old system. Apart from that, this new interface also offers me the possibility to select the period of the chart.” The charts generated in this way offer the possibility to track seasonal or weekly fluctuations in humidity and temperature and to identify anomalies.

Previously the Laténium was equipped with English sensors and a computer program, both of which were out of date and only offered isolated overviews. Now the archaeological museum has a complete overview of the site and measured values of all probes and can control them optimally. “The accuracy of our humidity probes is our biggest strength,” says Marcel Rohrbach, sales consultant at Rotronic.

“Following a call for tenders, we opted for this system because we can achieve a precision in humidity variations of +/- 0.8% while competitors can only offer +/- 2% in this area,” says Christian Cevey, who is also delighted about the flexible and efficient customer service of the Zurich-based company.

70 probes

“More than 15 years have passed since the Laténium was opened, and we therefore wanted to revise a number of fundamental factors such as, for example, the lighting and climate monitoring, which are of essential importance for the perfect preservation of the artefacts,” says Marc-Antoine Kaeser. Today there are around 70 probes distributed amongst the museum’s glass cabinets, meaning humidity measurement in Switzerland’s largest archaeological museum is now under control. For ideal conservation of the valuable historical artefacts.

“Since our museum is not air-conditioned, we need the probes!”

Christian Cevey
Head of the Laboratory for Conservation & Restoration
Department for Justice, Security and Culture

Scientific projects in the Laténium

The Laténium’s Laboratory for Conservation & Restoration is involved in various scientific projects in the field of fundamental research in conservation & restoration as well as in applied research (development of marketable products). This work is conducted in partnership with the scientific institutes of various colleges and universities as well as with other partners of the museum. To this end, the museum maintains close relations with the course in Conservation & Restoration at the Swiss University of Applied Science ARC in Neuchâtel. Depending on the needs of the museum’s cooperation partners, the laboratory accepts contracts from third parties for conservation & restoration in its fields of expertise every now and then.

www.latenium.ch

About Rotronic

Rotronic is an international development and manufacturing company that offers a wide range of products and solutions in the B2B segment. Founded in 1965, the company is headquartered in Switzerland and now has 8 subsidiaries and 42 distributors. Rotronic develops and manufactures solutions for measuring and monitoring relative humidity, temperature, CO_2, differential pressure, pressure, flow, dew point, and water activity. The company began the digital transformation already in the year 2000, investing in automated data transfer (machine-to-machine). With the development and launch of its RMS monitoring software, Rotronic further strengthened its position as a key supplier of measurement solutions.

Rotronic is part of “Process Sensing Technologies” (PST).

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