

Perfect Climate in Duty-free Warehouse

Switzerland has around a dozen duty-free warehouses. These warehouses are transit zones for the storage of goods, whose main advantages are the temporary suspension of customs law and taxes. They benefit not only from a location in the heart of Europe, but also from legal and political stability. The company Ports Francs et Entrepôts de Genève SA, in which the Canton of Geneva holds an 87% interest, is domiciled in La Praille, where it manages a floor space of 150 000 m², half of which under the Swiss customs regime (duty-free). The company also maintains storage space (10 000 m²) in the cargo hangar at the international airport in Geneva.



One of the 227 Rotronic HygroFlex transmitters in the duty-free warehouse of Ports Francs.

To ensure it is able to meet high standards in quality and security, Ports Francs et Entrepôts de Genève SA inaugurated its new warehouse in 2014. It was specially designed to store valuables in accordance with the requirements of insurers. To establish the necessary climatic conditions, temperature and humidity transmitters from the Zurich-based company Rotronic were installed to enable control of the optimum storage climate.

But first a little history. A free port is originally a transit zone in a harbor in which it is possible to discharge, store, convey, re-ship or temporarily hold goods in expectation of importing them. Payment of the customs duties and taxes is suspended and eventually effected in the country in which the goods are consumed or used.

A delivery under the free port regime is equated with an export from a country of origin and the value added tax of this country can be reimbursed immediately. There are free ports on all continents. They promote the movement of goods, and therefore also trade and ultimately the economy as a whole. Most European countries have one or more free ports allowing storage for a certain period of time.

1 000 commercial premises in La Praille

There are currently 10 duty-free warehouses in Switzerland, with the one in Geneva being the most important. Duty-free warehouses are usually located near national borders and the country's second-largest airport. In contrast to most other countries, there is no time limit for storage in Swiss duty-free warehouses for goods not



stemming from Switzerland. In 1888 the canton parliament approved the establishment of the operating company Ports Francs de Genève SA, which was later renamed to Ports Francs et Entrepôts de Genève (PFEG). There are almost 1000 commercial premises of all

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Marc Golay, Ports France, Genève

sizes available in la Praille. The type of goods stored in duty-free warehouses has changed immensely over the years. The strong development in the art and wine market has given rise to special security and quality requirements concerning, in the first instance, storage conditions (temperature, hygrometry, lack of vibrations). The new warehouse building, designed in collaboration with specialized contractors, was inaugurated in 2014. The building, which serves mainly to store valuables such as antiques, works of art and wine, is the result of close cooperation between various specialists in security issues, insurance, energy and architecture as well as the users. The numerous elements listed in the requirement specification included the important point of climatic conditions (temperature and humidity) in the building’s storage rooms.

Like in our wine cellars

To ensure a high standard of quality and security, Ports Francs et Entrepôts de Genève SA approached the Zu-

rich-based company Rotronic AG in Bassersdorf through its contractors. “We need precise and stable measuring instruments,” says technical director Marc Golay. The building concerned is equipped not only with a ventilation and air-conditioning system (humidity and temperature), but also with a central management system of the type MSR (measuring, control, regulation). The building is divided into two large parts. The first is for storage of wine in accordance with applicable regulations (70% humidity, 13°C), as in the cellars of our forefathers. The second part is reserved for sensitive and valuable goods, primarily paintings (55% humidity, 21°C). “Since it was one of the main aspects of the building concept, we also wanted to have the possibility to trace the climatic conditions during storage.”



Marc Golay from Ports France Genève shows Marcel Rohrbach from Rotronic where one of the Rotronic transmitters is mounted.

This very functional location enables arrival of the goods by road with a loading platform and direct access to the premises. Equipment rooms, escape routes, freight elevators, elevators and sanitary facilities round off the building. “We wanted a system able to maintain a constant level of humidity and a constant temperature everywhere and at any time of the year. To ensure control and logging of these parameters, we opted for the measuring instruments from Rotronic”, adds Marc Golay.

227 Rotronic transmitters

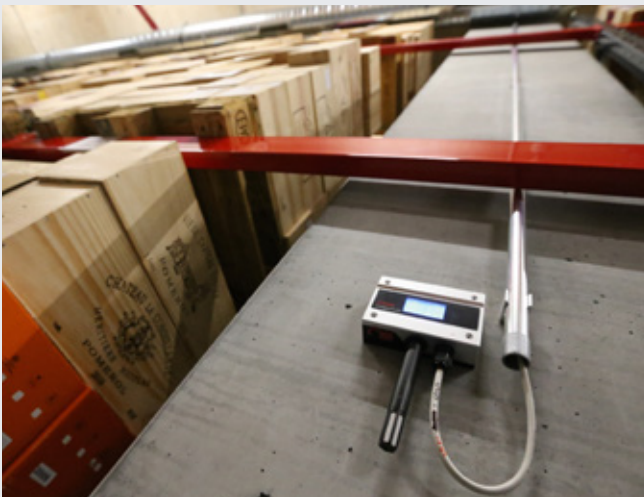
Depending on the storage area of the goods, it is not always easy to check whether ventilation and air replacement are working effectively everywhere. This resulted in the idea of distributing 227 Rotronic transmitters of

the type HF135-AB1X around the complete premises (see box). The instruments are monitored remotely by a system of the type MSR from the Geneva manufacturers EnerBat – a specialist in the technical and energetic monitoring of buildings and installations – which checks daily that the temperature and humidity requirements are being met. Since the building was designed to guarantee the best storage conditions, it does not have any windows so that the climatic conditions can be kept as stable as possible. To improve security for protection and prevention of fires, all stores are equipped with a common, dedicated gas extinguishing system (cocktail on nitrogen basis). This method of smothering the fire leads to a reduction in the

oxygen level without risk to any people who might still be in the building. This level corresponds to an oxygen content as found in high mountain regions (at about 6 000 meters above sea level).

The importance of the measuring equipment

Why was Rotronic preferred over other companies? “It is a company with an excellent reputation that takes action immediately when necessary. It is extremely important that the probes work reliably and accurately as they deliver all the information on the climatic conditions in the building,” explains the technical director. Thus the importance of the measurements.



The HygroFlex HF 135-AB1X probe from Rotronic.

Perfect control of room temperature and air humidity

The Geneva company Elitec SA, a Rotronic customer, installed a series of measuring probes in the storage buildings of Ports France et Entrepôts de Genève SA, among them:

- 260 main HF 135-AB1X probes (227 installed, the rest as reserve)

As well as:

- 22 probes (wall and duct mount probes) in the logistics hall of CICR
- 2 wall mount T/rF probes and 1 duct mount T/rF probe in the archives of CICR
- 3 duct mount probes in the Red Cross museum
- 1 ventilated outdoor probe for the Swissquote building in Gland
- 35 duct mount CO₂ probes for the school Le Sapay

The wall mount T/rF probes for the duty-free warehouse were fastened to the walls at a height of about 150 cm from the floor. They enable control of the temperature and humidity in the room air and emit a warning signal when limits are exceeded. The probes are also connected to instruments from Saia-Burgess Controls, which were delivered and programmed by Elitec.

These devices are connected to each other by Ethernet and integrated in a Scada monitoring system. “We decided to use the products from Rotronic because they were the best value for money,” says Fabien Caradot from Elitec. “There were of course other possibilities, but at the same price Rotronic scored higher with its HF1 product range in terms of quality, reliability of the material, technical support and calibration.”

Elitec, which originally worked in the manufacture of electrical switchboards, today employs around 20 people and rounds off its portfolio of services with the fields of building automation, home automation and various inspection services such as technical and schematic analyses.

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