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Vaisala's AMT100 Series ammonia detectors celebrate their 1st Birthday

Vaisala Ammonia Detectors' successful first year

It was one year ago that we launched the AMT100 Series Ammonia Detectors. Vaisala's polymer thin film sensor, AMMONICAP[®], has proven its reliability in both cold and warm environments (-40°C to +60°C). Demanding installation sites with different background odors and gases have shown that the AMT100 Series Detectors have excellent ammonia selectivity – thanks to the AMMONICAP[®] Sensor. Moreover, the low maintenance and short warm-up time of only 3 minutes have brought us many satisfied customers. This article summarizes some comments from our global customers and also gives information on AMT100 Series applications.

One of our customers is a company called KWH Freeze, who offer cold storage. Their CEO, Peter Lång, explains, "KWH Freeze rents refrigerated storage space to anyone who needs it, and also provides internal logistics. The quality of our services is a high priority for us as KWH Freeze is one of the biggest companies in this area in Finland. We chose Vaisala's AMT100 Series Ammo-

nia Detectors for our new storage rooms because of their performance in cold temperatures and flexible interfacing. It can be connected directly to automation systems or to typical gas controllers."

AMT100 Series entering the Japanese market

We have also been successful in introducing our AMMONICAP[®] sensor in a very important industrial nation, Japan. One of our ammonia detector customers, Nichirei, is a general processed food company based on storage operations. The company is a leader in the refrigera-

tion warehousing industry and also the number one frozen food company in Japan. Mr. Norihiro Koishikawa, who works as team leader of the technical section delivery team, comments on their experiences with previous instruments: "We had been having problems with semiconductor type ammonia detectors, the main problem being false alarms caused by other gases such as hydrogen in the cold storage rooms. We then tested the AMT101 and found that it does not react to other gases." Mr. Koishikawa indicated that their alarm system is working well with AMT101 at -25°C (-13°F). He also appreciates the option of extra interchangeable probes for easy and fast maintenance even in critical situations.

Demanding users in the food industry

It is not difficult to find a demanding environment in the field of ammonia detection, the food industry offers excellent challenges, for example. The Apetit Group markets its products primarily in Finland, but

has gradually expanded its market area to include the Baltic Rim. Apetit develops, produces and markets frozen foods, fish products, jams and marmalades, all from pure, carefully selected raw materials. Apetit meets the requirements of clean and safe food production in order to achieve sustainable development. Mr. Kyösti Lind, who works as an automation engineer in the maintenance department at Apetit Group, points out: "Apetit is Finland's market leader in frozen foods, as well as in jams and marmalades produced for retail. We have two production sites in Finland, one in Säkylä and another in Turku. When Vaisala launched their new AMMONICAP[®]-based Ammonia Detector, we saw a good opportunity to replace some old ammonia detectors in problematic places."

Enabling the production of high-quality ice cream

Within the food processing industry, ice cream factories are big users of ammonia. One of Vaisala's ammonia detector users

Vaisala AMT100 Ammonia Detectors are highly ammonia specific, which reduces costly false alarms.



Ammonia is a common refrigerant in cold stores and the food processing industry. Despite its many advantages, ammonia is a hazardous chemical and must always be handled in a safe manner.



Antero Pasanen stresses the importance of high selectivity that the AMT100 Ammonia Detector offers.

is an ice cream facility located in the United States. This ice cream plant is using ammonia as a refrigerant in its facility, situated in a densely populated area. As a consequence, ammonia leak detection units are imperative for safety reasons. The plant has a very elaborate control system in order to monitor numerous parameters, including ammonia leak detection. They had a problem with the former ammonia sensor, a catalytic sensor, which was very inaccurate and required frequent maintenance. Because of the numerous odors at the ice cream facility and the temperature of the rooms, -31°C (-23°F), the catalytic sensor would not function correctly. Annoyed by the inaccuracies of this sensor, the facility installed four Vaisala AMT101 Ammonia Detectors in its ice cream production rooms. With no false alarms and all detectors functioning correctly at such a cold temperature, our customer will be replacing all catalytic sensors in the facility with Vaisala AMT101 Ammonia Detectors in the future.

Another example of an ice cream manufacturer that uses Vaisala technology is the Finnish food industry group Ingman Foods, which is a wholly owned subsidiary of Ingman Group. The Group has been systematically developed over the years to become one of Finland's leading

food manufacturers, with an important position in the dairy sector. The strategy of the Group is to concentrate on milk-based products and complimentary products that apply the same production technology. The products are safe and of a high quality. Fresh Finnish milk is the most important raw material, forming the basis of production. Ingman's main product groups are:

- chilled dairy products
- liquid milk products
- ice cream products
- cheese, butter and powder.

"Our production facilities in Sibbo, close to Helsinki, invested in a bigger +2°C storage room facility in 2002. Vaisala's Ammonia Detector was the obvious choice because of its high ammonia selectivity," comments Mr. Antero Pasanen, a technical manager in Sibbo Factory.

Ammonia detection without false alarms

In food processing industry there are numerous demanding measurement needs and ammonia detection is a very challenging field for manufacturers of measurement instruments. Controlled Environments Constructive, Inc. is a general contracting firm in Tustin, California. The company is involved in numerous applications, ranging from the pharmaceutical industry to cold storage warehousing. Within their organization they also specialize in control systems for these applications. Controlled Environments Constructive purchased six AMT101 units in the summer of 2001. Mr. Mark Smith, who works in the system controls and integration division, incorporated these units into a control system. In this system, temperature and defrost control were also monitored in a cold storage warehouse where ammonia was used as a refrigerant. He utilized the 4-20mA signal from the units, which was received on his control panel. There are 3 alarm levels pro-



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grammed into the panel, which activate different actions within the facility depending on the level of ammonia that the AMT101 senses. The units have been placed outside in a docking station, in a machine room, in freezers, and also in an ice cream room. Mr. Smith comments: "I have been very pleased with the Vaisala AMT101 Ammonia Detectors. This is the first time I

have not had any false alarms with an ammonia detector."

These examples of customer comments are encouraging. Continuous co-operation with our customers is essential during the whole lifetime of products. Our aim is to continue intense work in the ammonia detection field and to develop even better instruments in the future - with the help of our customers. ●

New accessory for ammonia detectors

Vaisala is launching the new IP33 Box for AMT100 Series Ammonia Detectors. The IP33 Box has been designed for use in either outdoor or harsh indoor environments, where the unit may need extra protection from water. Continuous cleaning and washing with sprayed water sometimes causes extra coverage need for the ammonia detector body, especially at process sites in food processing industry.



The detector slides into the IP33 Box and the unit is then protected from falling water. The box protects the unit up to a maximum raining water angle of 60 degrees. ●