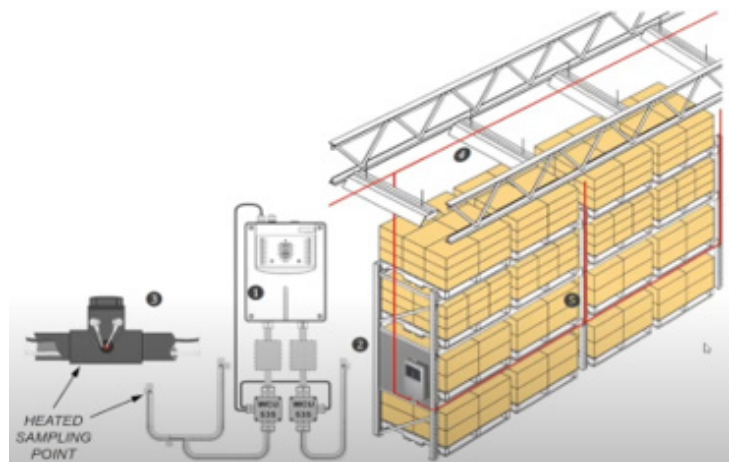


Refridgerated Cold Storage Application Note



APPLICATION

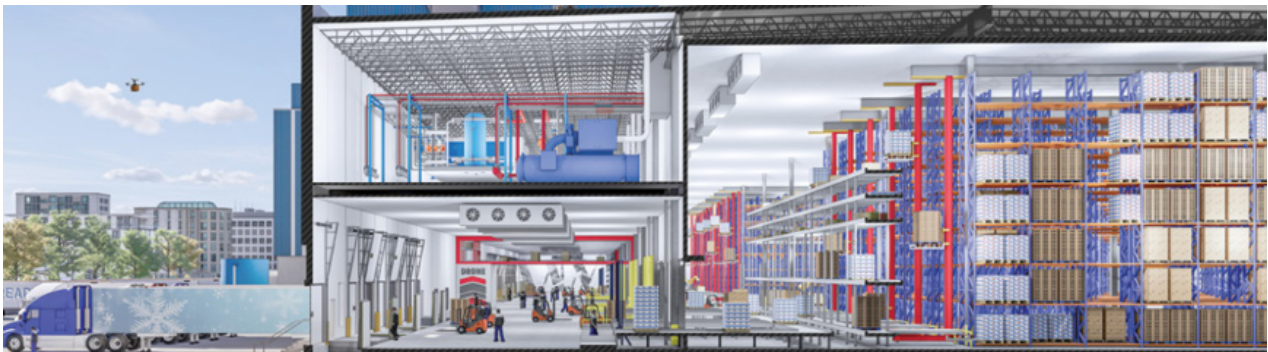
While the threat of a fire may seem minimal in subzero temperatures, serious risk factors exist in food industry cold storage facilities.

Most stored goods and delivery materials (boxes, pallets, packaging) are combustible. The environment is dry with low humidity and contains multiple ignition sources.

Additionally, the building's insulated walls and ceiling can retain a fire's heat, potentially furthering its spread, and high airflow can disperse smoke throughout the refrigerated space.

The cost of a fire goes far beyond the loss of a building.

Due to the nature of the goods being stored such as meat, produce or dairy, commonly stored in freezers or coolers, it is essential to avoid any increase in temperature. Heat from a fire or a temperature rise due to refrigeration shut down following a fire can result in significant stock spoilage and revenue loss.



CHALLENGES

Refrigerated cold storage facilities with temperatures typically ranging from -40°C to 18°C are definitely a challenge in regards to smoke Detection.

Low humidity, high airflow conditions resulting in significant dilution of smoke, and the volume of high storage racking can affect airflow and impede the detection of a fire event with conventional smoke detection systems.

Traditional photo optical detectors are not designed to operate in food industry, sub-zero temperatures.

The leading causes of fire in cold storage facilities include problems with electrical distribution, lighting equipment, transport equipment faults (conveyors), maintenance operations (hot work) and arson.



SECURITON ASD-535 Aspirating Smoke Detector

The ASD-535 can monitor warehouses to minus 30 °C in accordance with response classes B and C in compliance with AS7240.20.

The ASD-535 rated to -30 °C can be installed inside the freezer environment avoiding any mixing of warm /cold air in sample pipes that can result in icing.

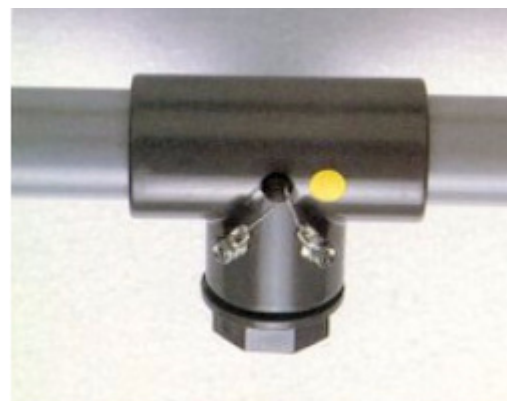
This combined with Heated Sample points provides the perfect solution for freezer protection.



HEATED SAMPLING POINTS

In refrigerated warehouses, goods are moved in and out of Freezer areas on regular basis. When fork lift trucks enter and leave the freezer area through an anti-room, warm moist air from the anti-room typically enters the refrigerated area. The warmer moist air rises to the ceiling and freezes.

The icing on ceiling can cover the sampling points on the ASD pipe and prevent air samples from being properly drawn in. The Securiton's, on-demand heated sampling points are ideally suited for heating the sampling points and keeping them ice-free, actuated by the ASD 535's airflow monitoring component.



Heated sample point

REFRIDGERATED COLD STORAGE DIAGRAM

