Critical Environment Technologies™

APPLICATION GUIDE

Cold Storage and Freezer Rooms

QCC Controller & LPT-A NH3 Gas Detector

Peace of mind. Guaranteed.

Continuous monitoring of ammonia in cold storage or freezer rooms

The food and beverage industry commonly relies on ammonia refrigeration to provide consumers high quality, edible food and cold drinks. An ammonia leak in a cold storage or freezer room can pose a serious health threat and result in spoiled food and other expensive losses. If a leak is detected, you want the peace of mind that comes with a properly installed ammonia monitoring system.

Using Critical Environment Technologies' QCC Quad Channel Controller and one or more LPT-A Analog Transmitters is the solution. The LPT-A transmitter(s) with an electrochemical ammonia sensor mounted inside the cold storage or freezer room provides continuous monitoring for leaks. The QCC Controller mounted outside the room door provides a status of the air quality conditions inside the room prior to entry.

The QCC Controller should be equipped with a top mounted strobe and a manual shut off switch (meets B52 code requirements). At specified alarm levels, the ventilation system can be activated as well as any remote devices such as the remote strobe & horn combo. The manual shut of switch can be used to shut off the chiller equipment.

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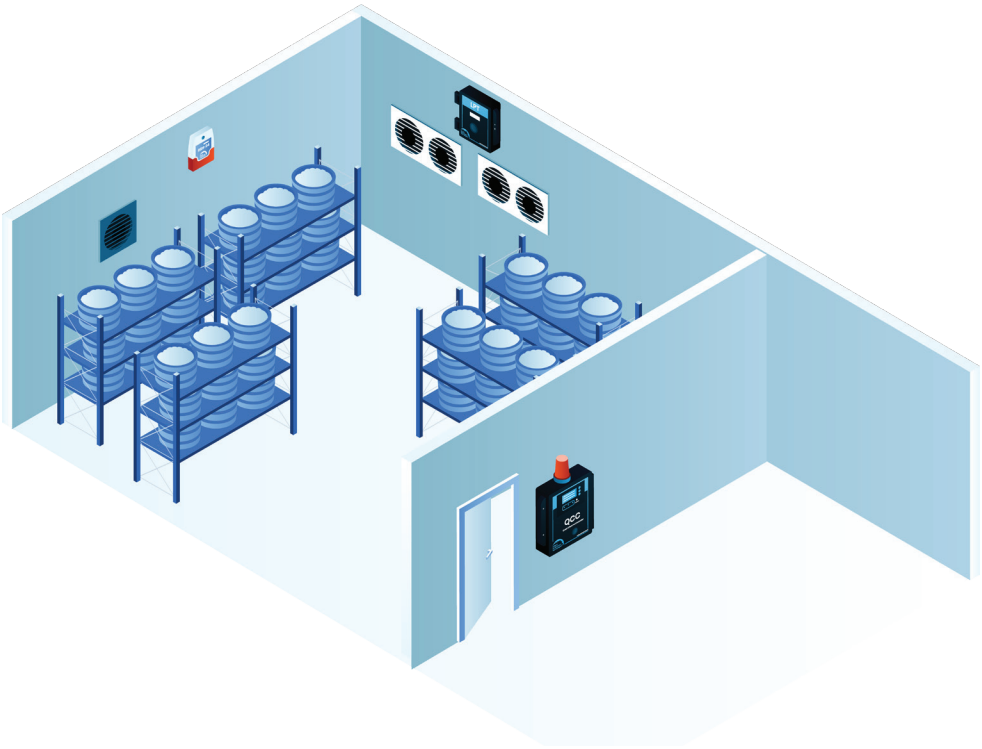
Continuous Monitoring of Ammonia (NH_3) in a Cold Storage or Freezer Room

Cold storage and freezer rooms vary in size, height and layout. Generally, one fixed LPT-A-NH3 transmitter will provide coverage for approximately 5,000 sq ft. However the arrangement of the shelving units and the amount of food being stored can create walls that segregate areas that cannot be monitored by one transmitter. In that case, multiple LPT-A-NH3 transmitters are recommended to ensure that the health and safety of employees is not jeopardized if an ammonia leak does occur. Ammonia gas is lighter than air and will accumulate at the highest point in the room. Therefore, the LPT-A-NH3 should be mounted on the ceiling (regardless of how high the ceiling is) away from ventilation fans and any rapidly moving air. The LCD display on the LPT-A-NH3 transmitter can be enabled or disabled, as can the audible alarm. If the temperature of the room is below -20°C (-4°F), an optional heater can be added to the LPT-A-NH3 so the LCD display continues to function in the colder temperatures. Gas measurement readings will be transmitted from each LPT-A to the QCC controller and will be viewable on its display prior to entering the room. If there is more than one entrance to the room, the QCC-RDM Remote Display Module can be mounted outside the second entrance, providing the same information prior to entry as the QCC Controller.



The QCC Quad-Channel Controller with a top mounted strobe and manual shut off switch (meets B52 requirements) should be mounted outside the cold storage room entry door. It will interface to the LPT-A-NH3 transmitter(s) inside the room and will display the target gas levels for viewing prior to entering the room. The QCC is pre-programmed and field adjustable. Functions that can be set include relay assignment, time delays, logic control, sensor types and ranges, alarm set points, etc. There is a 4-line by 20 character backlit LCD display that actively scrolls through all the programmed channels and displays the gas name, concentration and alarm status. The QCC should be configured to set off alarms and activate the exhaust ventilation system or other alarm procedures as appropriate when a leak is detected. The QCC can accept inputs from up to 4 analog and/or digital transmitters, using Modbus® RS-485 digital communication. (BACnet® communication is available if required).

There should be a visual and audible alarm device such as the Remote Strobe & Horn (RSH-24V-R) mounted inside the room.

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