



AMMONIA GAS DETECTION SYSTEMS

WHERE MIGHT HAZARDOUS LEVELS OF AMMONIA OCCUR?

- Ice rinks
- Cold storage units
- Supermarkets
- Convenience Stores
- Ice cream plants
- Ice making plants
- Meat packing and processing plants
- Food processing plants
- Food distribution centers
- Chemical storage rooms
- Chiller rooms
- Manufacturing plants
 - Fertilizer
 - Pharmaceuticals and cosmetics
 - Textiles
 - Ammonia
- Universities
- Wineries and breweries
- Livestock facilities
- Hospitals

WHAT AMMONIA GAS DETECTORS ARE AVAILABLE FROM CETCI?

Product	Part Code	Sensor Type	Sensor Range	Default Factory Alarm Setpoints
LPT-A Analog Transmitter	LPT-A-NH3	Electrochemical	0 - 500 ppm	Low: 25 ppm Mid: 50 ppm High: 200ppm
LPT-A-VLT Vent Line Transmitter	LPT-A-VLT-NH3-S	Catalytic	0 - 3% volume	0.5% (5,000 ppm)
LPT-M Modbus® Transmitter	LPT-M-NH3	Electrochemical	0 - 500 ppm	Low: 25 ppm Mid: 50 ppm High: 200ppm
LPT-B BACnet® Transmitter	LPT-B-NH3	Electrochemical	0 - 500 ppm	Low: 25 ppm Mid: 50 ppm High: 200ppm
CXT Explosion Proof Transmitter	CXT-A-NH3 (Analog) CXT-D-NH3 (Digital)	Electrochemical	0 - 500 ppm	Low: 25 ppm Mid: 50 ppm High: 200ppm

For a complete Ammonia Gas Detection System, add a QCC Quad Channel Controller with a top strobe, manual shutoff switch and a remote display.

AT WHAT HEIGHT SHOULD THE GAS DETECTOR BE MOUNTED?

Ammonia is lighter than air and collects at the ceiling (or the highest point of the room). Therefore the gas detector/sensor should be mounted on or at the ceiling. If you were to mount the detector at breathing height (1.2 - 1.8 m / 4 - 6 ft from the floor), the concentration of ammonia would start at the ceiling and move down towards the breathing height as more and more leaked and collected. By the time the ammonia level was at breathing height, the room would be so full of ammonia, not only would it be a breathing hazard, but also an explosion/fire hazard, not to mention the high cost of losing all that ammonia. The goal is to be alerted of an ammonia leak as soon as possible so safety measures can be taken to stop and repair it.

NOTE: In the presence of moisture (such as high relative humidity), ammonia gas forms vapour that is heavier than air and may spread along areas with poor air flow where people may be exposed.



WHERE ON THE CEILING SHOULD THE GAS DETECTOR BE LOCATED?

The ammonia gas detector should be placed on the ceiling where there is good air circulation but away from ventilation fans, openings to the outside and not in the path of rapidly moving air. It should also not be placed in dead air spots, where there is little or no air movement. Ideally, the sensor should be placed near the gas source, above the compressor, generator and valves, if possible, to ensure early detection.

HOW MANY GAS DETECTORS ARE REQUIRED?

CETCI's ammonia gas detectors have a sensor range of approximately 465 m² / 5,000 ft². The number of gas detectors will depend on the size of the machine room and the location of the ammonia equipment inside the room. Our knowledgeable Sales Managers can help you determine what is suitable for your application.

WHAT IS A BUMP TEST AND WHY SHOULD THEY BE DONE?

A bump test is a brief exposure of the sensor to gas and verifies if the sensor is responding and the alarm is functioning.

HOW OFTEN SHOULD AN AMMONIA GAS DETECTOR BE BUMP TESTED?

At minimum, the ammonia gas detector should be bump tested once a month as part of the monthly maintenance plan for the device. There is no limit on the number of bump tests; they may be done more often depending on application and the comfortability/confidence level one has in the device and how it responds. If a bump test fails, a full calibration should be done. Bump test dates and results should be written down in a log book.

WHAT IS CALIBRATION AND WHY SHOULD IT BE DONE?

Calibration is the exposing of the sensor to a certified concentration of gas for a particular length of time and verifies that the gas detector is providing an accurate reading.

HOW OFTEN SHOULD AN AMMONIA GAS DETECTOR BE CALIBRATED?

At minimum, the gas detector should be calibrated every 6 month. More frequent calibrations may be required depending on application, regulatory laws, sensor response and exposure levels to the gas. If a bump test fails, a full calibration should be done. Calibration dates and results should be written down in a log book.

WHAT IS THE LIFESPAN OF AN AMMONIA SENSOR?

The lifespan of an ammonia sensor is measured in ppm hours. The more gas the sensor sees (constant exposure), the shorter the life span of the sensor. A high concentration all at once will poison it and render it useless.

WHERE DO I FIND MORE INFORMATION ABOUT AMMONIA SAFETY STANDARDS AND REGULATIONS?

Check your local/provincial/state's:

- Safety Standards Act for gas safety regulations
- WorkSafe regulations

Canadian Standards Association (CSA Group) <https://www.csagroup.org/>

Canadian Center for Occupational Health and Safety (CCOHS) <https://www.ccohs.ca/>

American Society of Heating Refrigeration and Air Conditioning (ASHRAE®) <https://www.ashrae.org/>

Occupational Safety and Health Administration (OSHA) <https://www.osha.gov/>

Ammonia Safety & Training Institute <https://ammonia-safety.com/>

American Conference of Governmental Industrial Hygienists (ACGIH®) <http://www.acgih.org/>