

## Peace of mind. Guaranteed.

Continuous monitoring of refrigerant gas in mechanical rooms with two chillers.

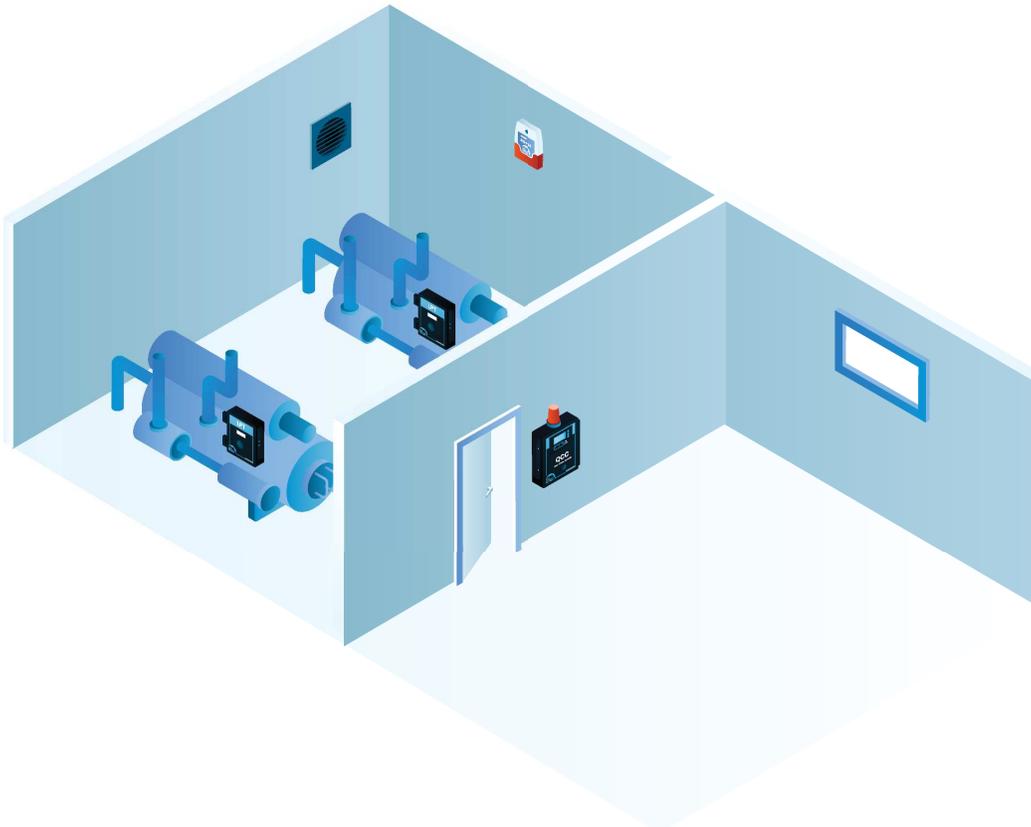
Early detection of a refrigerant leak helps prevent dangerous health consequences to occupants, reduces significant loss of expensive refrigerant and decreases energy costs. If a leak does occur, a fixed gas detection system permanently installed near the chiller equipment in an area where a refrigerant leak is most likely to concentrate will ensure people will be alerted and kept safe.

Critical Environment Technologies' **QCC** Quad Channel Controller and two **LPT-A** Analog gas detectors with a solid state refrigerant sensor provides an economical and reliable gas detection solution. Outside the door of the mechanical room, the **QCC** Controller should be mounted with a top mounted strobe and a manual shut off switch which meets B-52 Mechanical Refrigeration Code requirements. The **LPT-A** transmitters will be mounted inside the room to provide continuous monitoring for potential leaks. When gas level readings reach a predetermined level, the **LPT-A** will trigger its own alarm and relay (if configured) and send a signal to the **QCC** which in turn will trigger audible alarms and activate the mechanical ventilation system and call emergency response as configured.



Inside the mechanical room, two LPT-A Analog transmitters, each with an internal solid state refrigerant sensor should be placed in the areas where a refrigerant leak is most likely to concentrate and where pooled refrigerant is likely to accumulate. Refrigerant gases are heavier than air and will concentrate closer to the floor and in areas with less air current. Each LPT-A should be mounted 10" to 18" off the floor so it is at an appropriate height for detection and accessible for routine calibration and maintenance. The LCD display on both LPT-A transmitters can be enabled or disabled, as can the audible alarm. Gas

measurement readings will be transmitted to the QCC Quad Channel Controller and will be viewable on its display.



The QCC Quad Channel Controller should be mounted outside the mechanical room entry door and be equipped with a top mounted strobe and manual shut off switch (meets B52 code requirements). It will interface to the two LPT-A transmitters 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 x 20 character

backlit LCD display that actively scrolls through 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, shut down the chillers 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® MS/TP output is available if required to communicate with a BAS.

Remote visual and audible alarm devices such as the Remote Strobe & Horn (RSH-24V-R) should be set up inside the room and if there is another entrance to the room, a QCC-RDM Remote Display Module should be mounted outside the door of that entrance, to provide visual confirmation of gas level readings prior to entering the room.

For many refrigeration applications, using solid state sensors will provide an economical and reliable gas detection solution. Solid state sensors are reliable if used in a clean area with very little temperature and humidity changes. Solid State refrigerant sensors should not be used where there are other chemicals or gases present (other than refrigerants), such as alcohol based cleaners, fumes from running engines, fuel storage containers, etc.