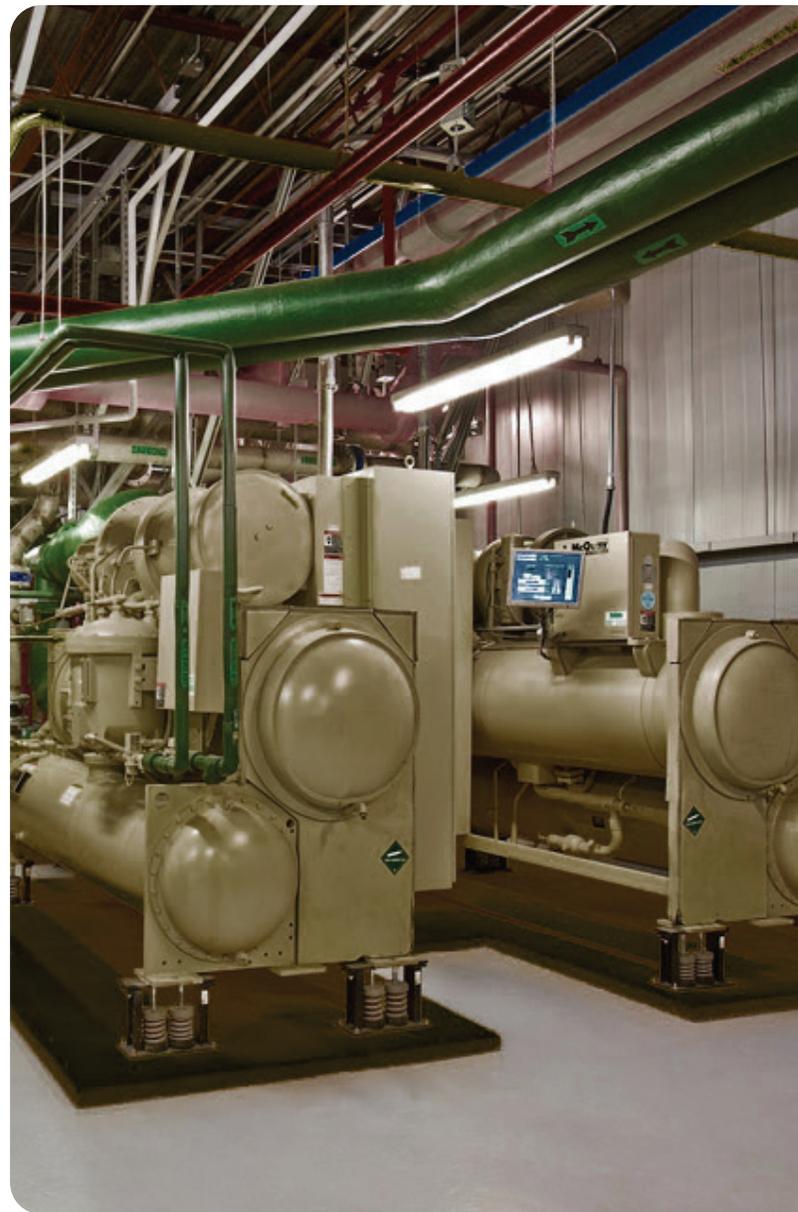


## Peace of mind. Guaranteed.

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

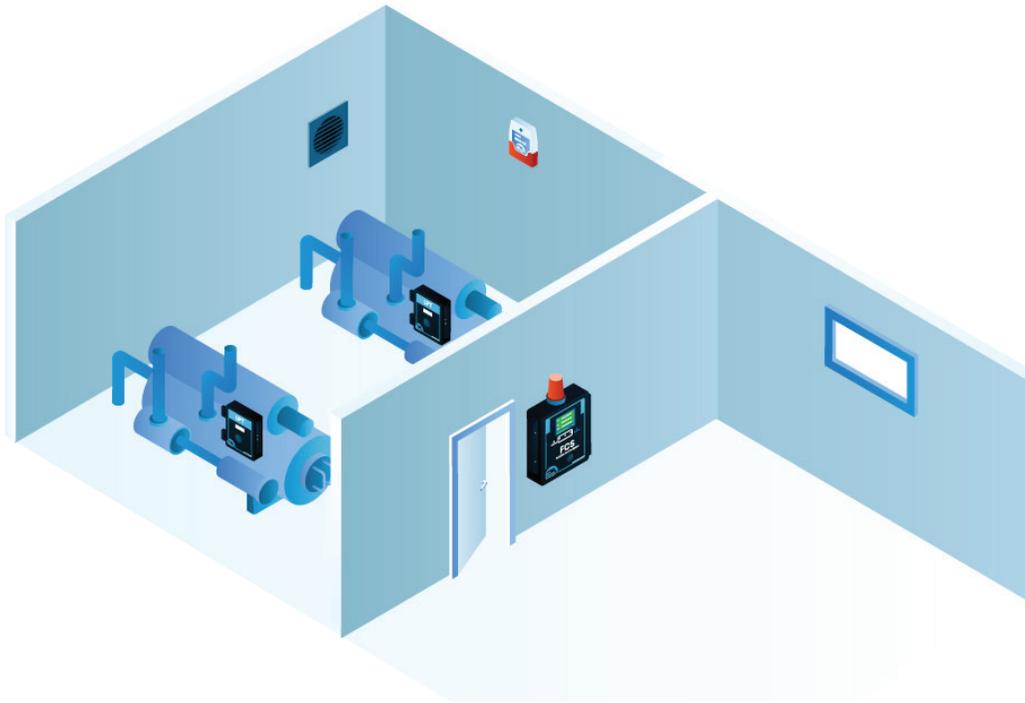
Early detection of a refrigerant leak helps prevent dangerous health consequences to occupants, reduces significant loss of expensive refrigerant and decreases energy costs. If a leak does occur, a fixed gas detection system permanently installed near the chiller equipment in an area where a refrigerant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

Critical Environment Technologies' [FCS](#) 4 channel Flexible Control System 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 [FCS](#) 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 [FCS](#) 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, but away from ventilation fans and any rapidly moving air. 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 FCS Flexible Control System and will be viewable on its display.



The FCS Controller with a top mounted strobe and manual shut off switch (meets B52 requirements) should be mounted outside the mechanical room entry door. It will interface to the LPT-A refrigerant transmitter(s) inside the room and will display the target gas levels for viewing prior to entering the room.

The FCS is pre-programmed and field adjustable, offering 4 dry contact relays, priority

settings, logic control, including time of day, data logging, audible alarm and a full colour, resistive touch screen. The FCS should be configured to set off alarms and activate the exhaust ventilation system, shut down the equipment or other alarm procedures as appropriate. The FCS-4 will need Option -AI installed to provide a maximum of 4 analog (4 - 20 mA) inputs for the LPT-A analog transmitters. Up to a maximum of four transmitters can be connected to the FCS-4. If more than 4 channels are required, other models of the FCS are available that offer 8, 32 or up to 64 analog channels. If a digital system is required, the CGAS-D solid state refrigerant transmitter can be used instead of the LPT-A.

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, an 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.