Critical Environment Technologies™

APPLICATION GUIDE

Schools / Educational Facilities

CGAS Detectors with Methane, CO and CO_2 Gas Sensors

Peace of mind. Guaranteed.

Continuous monitoring of natural gas, carbon monoxide and carbon dioxide in classroom environments

Potential gas hazards in educational settings include natural gas, carbon monoxide and carbon dioxide. Natural gas sources include fuel burning equipment or appliances such as an oil or gas furnace, water heaters and gas stoves or ovens. These sources can be found in the furnace room, science labs and kitchens where equipment can potentially leak natural gas. When natural gas doesn't combust properly, carbon monoxide is produced. If equipment is not properly maintained, malfunctions, wears out or if something just goes wrong, CO levels can quickly rise to hazardous levels. Carbon monoxide poisoning is a risk in all schools as the gas easily travels around through the air and can migrate to other areas of the building through vents, ducts and other openings.

Another potential gas hazard is the build up of carbon dioxide. CO_2 displaces oxygen. Every person exhales CO_2 and levels can become unhealthy quickly without proper ventilation. The health risk increases with crowded classrooms, indoor gym classes and gatherings in auditoriums.

The health and safety of students and faculty can be protected with Critical Environment Technologies (CET)'s FCS Multi Channel System Controller with a CGAS Public Space Gas Detectors with CO and CO_2 sensors installed in frequently occupied spaces such as classrooms, cafeterias, gymnasiums, office areas and auditoriums. To monitor gas leaks from natural gas sources in kitchens and labs, a CGAS Public Space Gas Detector with a methane sensor should be used.

1877.940.8741

sales@cetci.com

Critical Environment Technologies™

Continuous Monitoring of Natural Gas, Carbon Monoxide and Carbon Dioxide in Schools

Proper installation of a gas detection system for a school that has fuel burning appliances, a forced air system and lab equipment like Bunsen burners requires extensive planning and effort. Many schools lack good ventilation systems and may not have a building automation system to control the air flow and exchange. For those that do, the gas detection system can be interconnected with the BAS. For those that don't an FCS Multi Channel Controller can be used to control fans and audible and visual alarms. The FCS is commonly mounted in a central area or control room and the network of gas detectors throughout the school send signals back to the FCS Controller, which in turn responds as configured.

A remote ESH-A-CCH4-100 methane sensor, connected to a DCC Controller should be installed in the boiler room and may require the ability to shut off the boiler in the event of a CO alarm (see Boiler Room Application Guide).

CGAS Public Space detectors with a methane sensor should be installed near or on the ceiling above potential natural gas leaks from gas stoves and ovens in the kitchen area and in science labs above fuel burning equipment.

All areas that have a CO source, that are adjacent to each other or connected via ductwork should have a CGAS-DP-CO carbon monoxide detector installed. In classrooms where students are sitting the majority of time, the CO detectors should be mounted 3 - 5 feet / 0.91 - 1.5 m from the floor and connected to a supervised monitoring system that is capable of alerting faculty in every classroom and other areas of possible CO exposure before concentrations reach a dangerous level. Throughout the school CGAS-DP-CO2-5K detectors with a CO2 sensor should be mounted in the breathing zone in areas where students congregate.

When any of the hazardous gas levels rise above a preset level, the FCS will activate the ventilation system or trigger audible/visual alarms to alert teachers and staff to open windows. 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 accepts Modbus® RS-485 digital communication and analog (4 - 20 mA) signal (optional) making it the ideal central controller for any additional gas detectors that may be needed throughout school. Dedicated audible/visual alarm devices such as the RSH24V-R Remote Strobe/Horn should be mounted in centralized locations where they are easily seen and heard.

1877.940.8741

sales@cetci.com