Critical Environment Technologies™

APPLICATION GUIDE

CO_2 Enriched Crop Production

QCC Controller with CO, CO_2 & Combustible Gas Detectors

Peace of mind. Guaranteed.

Continuous monitoring of carbon monoxide, combustible gas and carbon dioxide in crop production

Greenhouses and other types of indoor grow rooms provide a structure for growing plants in a controlled environment. To create favourable growing conditions, reliable heating, cooling and ventilation systems must be used. If these systems are not maintained or are not properly monitored they may cause serious hazards to human health and may result in the destruction of property. Heating may be supplied be supplied by sunlight, natural gas, propane gas, fuel oil, wood or electricity. Gas powered equipment produces carbon monoxide. When CO_2 enrichment is used to increase plant growth and development either using cylinders of liquefied compressed gas or a carbon dioxide generator, a leak or faulty ventilation could cause an asphyxiation hazard.

Critical Environment Technologies' QCC Quad Channel Controller and a CGAS detector with an internal carbon monoxide sensor and an ESH-A remote propane (or methane) gas sensor, plus an CGAS carbon dioxide detector is the solution.

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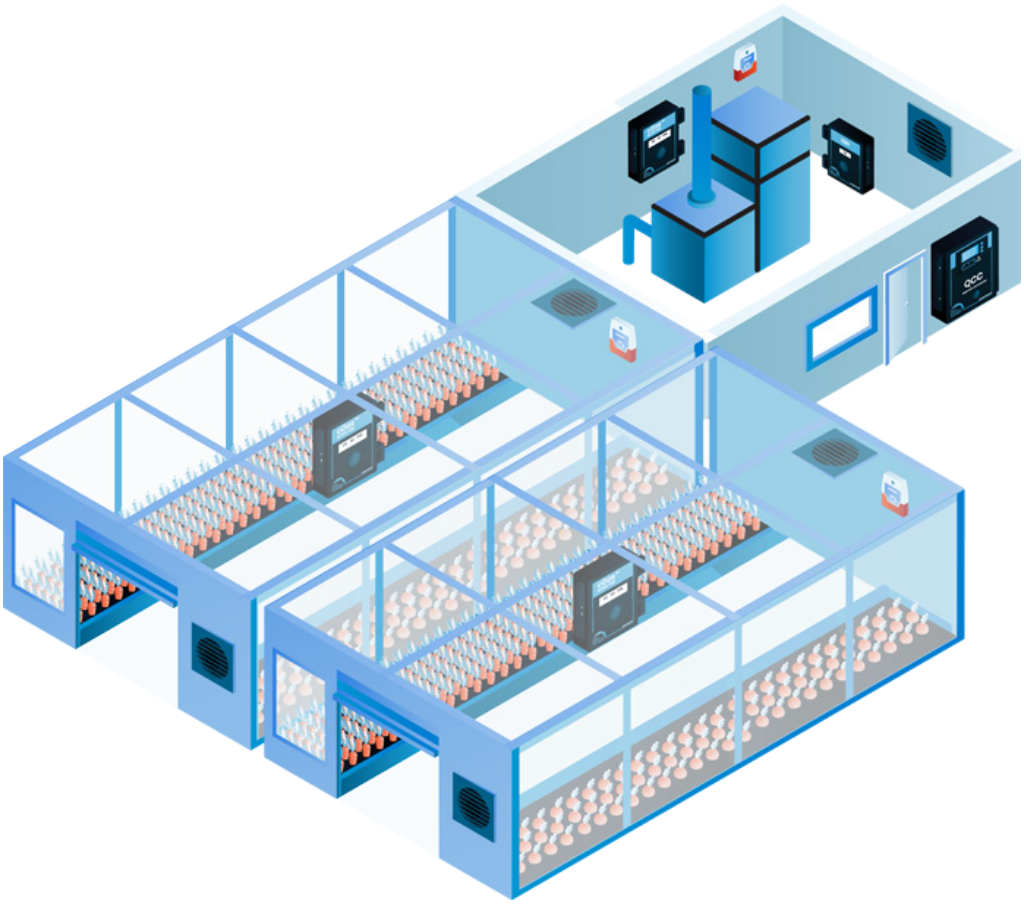
Continuous Monitoring of Carbon Monoxide (CO) Carbon Dioxide (CO_2) & Combustible Gas in Greenhouses

Two gas detectors should be mounted inside the furnace room - one for monitoring potential leaks in the pipes supplying the gas to the furnace and the other monitoring carbon monoxide levels generated by the furnace. A well maintained, efficiently burning furnace produces very small amounts of CO, but a dirty, inefficiently burning one can product deadly amounts. To monitor the CO levels, an CGAS-LCO-R should be mounted inside the furnace room at the "breathing zone" (4 -6 ft from the floor). Connected to the CGAS-LCO-R should be a remote sensor. If the furnace uses propane, an ESH-A-C3H8-100 remote sensor with an internal propane sensor should be used, mounted 6 inches off the finished floor, close to the pipes supplying the gas to the furnace. If the furnace uses natural gas, an ESH-A-CCH4-100 remote sensor with an internal methane sensor should be used instead, mounted 6 inches from the ceiling above the pipes supplying the gas. Inside the room should be an audible/visual alarm device such as the RSH-24V-R Remote Strobe/Horn.



Mounted outside the door of the furnace room would be a QCC Quad Channel Controller. If there are additional entrances to the room, each should have a remote visual/audible alarm device outside the door.

Inside the greenhouse should be a CGAS-D-CO2-5K carbon dioxide gas detector mounted in the "breathing zone" (4 - 6 ft from the floor) to provide continuous monitoring of CO_2 levels. This is especially important when a CO_2 enrichment practice is used. The standard range for the CGAS-D-CO2-5K is 0 - 5,000 and covers approximately 743 sq m (8,000 sq ft).

Each transmitter provides continuous monitoring of the gas levels in the air and will communicate with QCC, which in turn will display their gas level readings, and in the event of a leak / high gas concentration, will provide an audible alarm and control equipment such as the ventilation system, shut off the furnace, trigger the other remote horn/strobe devices or other set responses as configured using its 3 internal relays. The QCC can be ordered with an optional data logging package and it can be configured to communicate with a Building Automation System. The aforementioned gas detectors/sensors are housed in water / dust tight enclosures, and are IP54 rated with the factory installed splash guard, providing protection for the equipment in wet areas.

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