

Peace of mind. Guaranteed.

Continuous monitoring of ethylene and carbon dioxide in ripening rooms

Fruits and vegetables are shipped long distances from one country to another often before they are ripe so they can endure the voyage and remain viable. Upon arrival, they need to be ripened so they can be sold and consumed. To speed up the process, ethylene is introduced at concentrations between 10 and 1,000 ppm depending on the type of produce and environmental conditions in the air-tight ripening room. Ethylene is not toxic at these concentrations, but it is a very reactive and flammable gas, making the potential for an explosion a safety concern. As fruit ripens, it releases carbon dioxide. This decreases the oxygen level in the room and delays the effects of the ethylene. CO₂ levels in excess of 1% (10,000 ppm) will slow the ripening process and can cause quality and production problems.

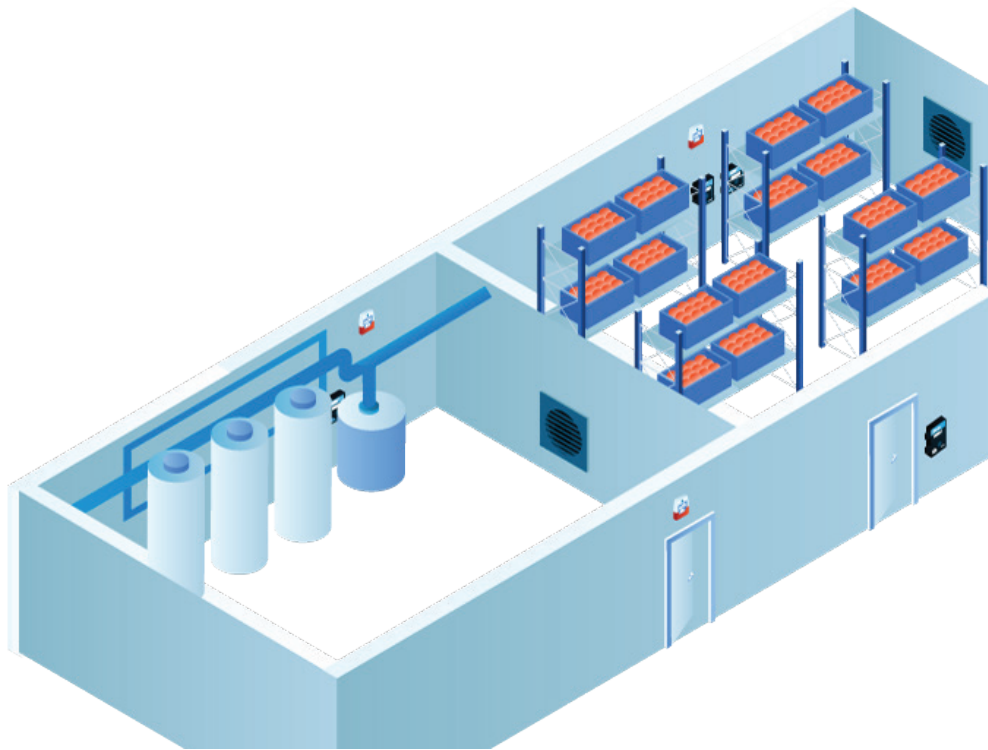
The best way to monitor C₂H₄ and CO₂ levels is with a fixed gas detection system. Gas level readings can be used to trigger alarms, turn on the ventilation system and call emergency response.

Critical Environment Technologies' cGas-SC Self Contained Controller with remote cGas-A ethylene and carbon dioxide sensors offers the features and functionality to ensure a safe and healthy environment for workers and the fruits and veggies.



Continuous Monitoring of Ethylene (C_2H_4) and Carbon Dioxide (CO_2) in Ripening Rooms

The cGas-SC Self Contained Controller should be mounted in an easily viewable location outside the ripening room. It should be connected to a remote CGAS-A-7C2H4 ethylene transmitter mounted at (1.2 m - 1.8 m / 4 - 6 ft) from the floor inside the ripening room to monitor the concentration levels of the ethylene gas in the room and be configured to control the gas flow and activate the ventilation system as needed. Another remote CGAS-A-7C2H4 ethylene transmitter should be mounted in the ethylene cylinder storage room where potential leaks could occur. The cGas-SC should also be connected to a CGAS-A-CO2-5% mounted in the ripening room at plant height and configured to activate the ventilation system at a predefined concentration to ensure optimization of the ripening process.



The cGas-SC Controller has three gas alarm setpoints and two dry contact relays rated 5A @ 240 VAC. Alarm level 1, 2 and 3 may also be referred to as LOW, MID and HIGH. Depending on the application, all three may be used or just the LOW and HIGH. The LED lights on the front of the enclosure will turn red in sequence from LED 1 to 3, corresponding with the level of alarm. The gas level readings will show on the display of the cGas-SC for easy viewing. An RSH-24V-R Remote Strobe / Horn should be visibly mounted inside the ripening room. One of the two internal relays of the cGas-SC can be used to trigger the Remote Strobe / Horn device in the event either gas level reaches or exceeds the alarm setpoints. The second relay can be used to activate the mechanical ventilation system or trigger another set response as required.

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The cGas-SC can be ordered with two user configurable analog outputs (Option -2AO) that can be used for VFD control and/or interface with a Building Automation System (BAS) which in turn can trigger alarms and other procedures as appropriate. The cGas-SC comes standard with an internal audible alarm and is available with an optional extra loud buzzer that can be ordered and installed at the time of purchase. If enabled, the external OK button can be used to temporarily silence the internal and any remote horns/strobes and clear any latched relays.

The cGas-SC fixed system is fully set up, programmed, calibrated and tested prior to being shipped from the factory. It is ready to install upon arrival and operate following the appropriate warm up period.

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NOTE: If CO_2 enrichment is being used, another CO_2 gas detector may be required in the cylinder storage room.