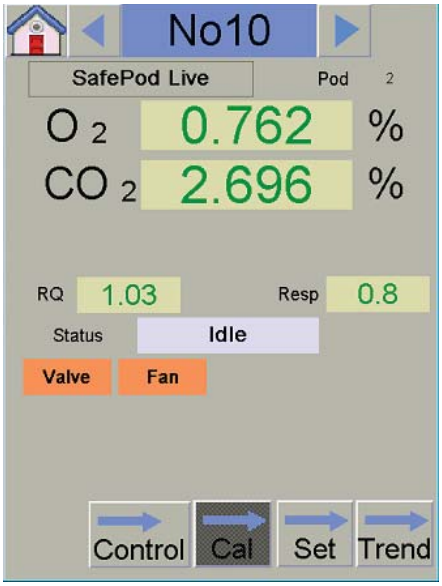
LABPOD MINI SYSTEM



The LabPod mini is for testing the response of fruit or vegetables to Controlled Atmospheres down to less than 0.1% Oxygen and for measuring their respiration and respiratory quotient. It is ideal for Postharvest laboratories working with controlled atmospheres and respiration rates within a controlled temperature environment, or for growers looking to confirm effectiveness of applied MCP treatments.

The LabPod mini is a hermetically sealed enclosure with a stainless steel base and a clear molded cover that sits in a water trough for perfect sealing. It has a capacity for about 10kg of produce in standard 200x400 inch plastic crates. Each pod is self-contained with built in Oxygen, Carbon Dioxide and temperature sensors with digital communications to a central operating panel. Built in control valves and gauges regulate the connected Nitrogen, Air and optional CO_2 supply to very accurately maintain the selected atmosphere.

Respiration and RQ are periodically and automatically measured using the built in high sensitivity analyzers. The atmosphere control is paused and the changes in Oxygen and CO_2 caused by the product respiration is measured and used to calculate and display the respiration rate. An internal low power circulation fan periodically stirs the atmosphere and is activated by the system controller.

The central operating panel supports from 1 to 32 LabPods which can be mixed between standard LabPods and LabPod minis and all the settings are made from this panel through its touch screen or remotely from a PC computer connected through a network. The measured data is regularly collected and can be displayed on a program that runs on the PC and can be exported to Excel or other common programmes.

The controller can be dedicated to the LabPods or it can be an addition to an existing SCS6000 CA control system running a conventional system using a single analyser and pumped sampling systems.

FEATURES

- Patented Technology - U.S. Patent No. 8739694, Canadian Patent No. CA2746152
- Leak Tight, Self-Contained Control of CA Atmosphere
- Measures RQ & Respiration
- Check MCP Treatments to Fruit
- 10kg Capacity
- Built-In High-Resolution Gas Analysers
- Automatic Operation
- Full Data Recording

LabPod mini

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LABPOD MINI SYSTEM

FEATURES & SPECIFICATIONS

MEASUREMENT & CONTROL RANGE

Oxygen: 0-25% or 0-2.5% Auto range Resolution low range +/- 0.002% O_2 Electrochemical 4-year long life sensor
Carbon Dioxide: 0-20% CO_2 Resolution <5% = 0.005% >5% = 0.02%

CONTROL INPUTS

Control Gases required: Nitrogen with an oxygen content lower than minimum required CA Oxygen.
Fresh Filtered Air. CO_2 if required. Gas supply inlet pressure 1 to 3 Bar (15 to 50 psi)
Automatic atmosphere control with included solenoids.
Control Setpoints for Oxygen and CO_2 adjustable to a 0.01% resolution. Gas control differentials 0.05%, CO_2 add differential 0.2%.
Air added when Oxygen is measured low: Air flow adjustable 0.5 to 5 L/min
Nitrogen added when Oxygen is measured high or when CO2 is high. Adjustable flow 1 to 10 L/min
CO_2 (if connected) added when CO_2 is low. Adjustable flow 0.1 to 1. L/min.
Additional flow rate adjustable from controller from 100% to 1% of maximum flow over a 5 minute period.
Optional CO_2 scrubber available for CO_2 control if Nitrogen flush CO2 removal is not acceptable.

RESPIRATION & RQ MEASUREMENT

Automatic frequency of measurement….adjustable from 10 to 999 hrs

OPERATION OF INTERNAL FAN

ON when control gases being added. With no gas addition, adjustable over range 1 to 999 seconds every 1000 seconds.

TEMPERATURE MEASUREMENT

Probe with a typical accuracy of 0.1°C available for measuring and recording the fruit temperature

ANALYSER CALIBRATION

Zero stability typically better than 0.05% over 12 months
Automatic Barometric pressure compensation for span calibration
Remote calibration possible from operating panel.
Sampling port available for atmosphere sampling with a portable standard analyser and for Ethylene and volatile measurement

WATER LEVEL DETECTOR

A warning indicated on operator's screen when water in trough is low and requires topping up.

HUMIDITY

Optional Wet/Dry RH measurement and ultrasonic humidification available

PRESSURE RELIEF

The flow of correction gases into the LabPod mini are automatically discharged to atmosphere through vents normally sealed by the water seal.

ELECTRICAL CONNECTION

One multicore cable for CAN data connection and 24v operational power. Connector and wall mounted termination box provided with each unit.

CENTRAL OPERATION PANEL

5.7inch touch screen display. Capacity for up to 32 LabPod connections. 24v power supply for the system included in Panel.
Additional power supply needed for greater than 16 Lab Pods. The controller has a standard Ethernet connection with a dedicated IP address. Remote client and PC software provided for PC operation.
Continuous readout of gas and temperature and operational status. Access to all control settings. Remote analyser calibration protected with a passcode. Settings for empty volume and product weight for respiration rate calculations

DATA COLLECTION

O_2, CO_2 and temperature recorded every hour together with most recent RQ and respiration results. Results stored on CF card in PLC and on hard disk of connected PC. Can be displayed on PC in Graphical and tabular formats and exported in various formats including Excel, Word and PDF.

LEAKTIGHTNESS

Oxygen at typically 1% in a static LabPod (no produce, no correcting gas) will remain within 0.1%O2 over a period of 48 hours.

DIMENSIONS

55 x 50 x 35 cm high Weight 13 Kg. Empty volume 41L. Pull down time to 2% Oxygen with N2 at 2 L/min is 1 Hour.
Capacity aprox 10kg fruit. Plastic ½ crate 300 x 400 mm Maximum height 240mm (1 x 220 box or 2 x 120mm box or 4 x70 mm)

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