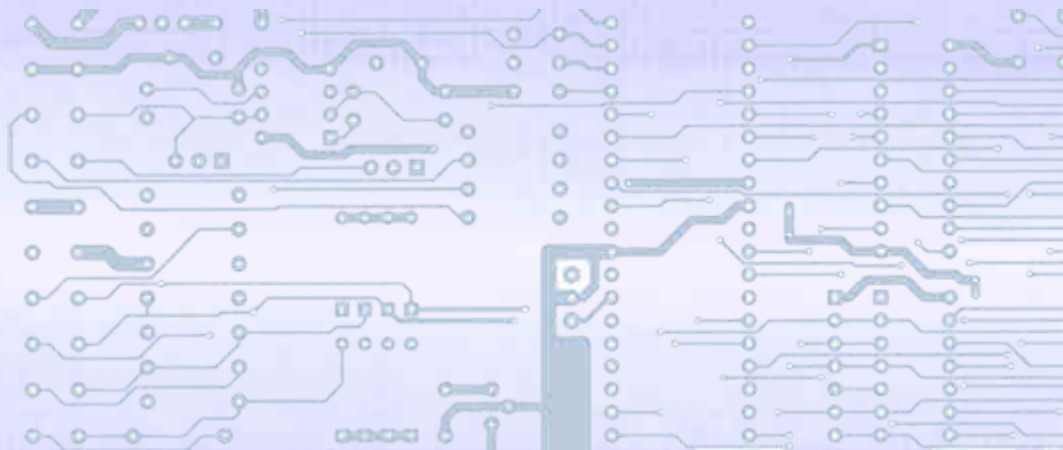
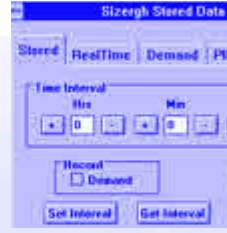


# Sizegh

## The Sizegh Controller

A Patented, Advanced, Closed Loop controller and Interface Programme (SIP) for a wide range of Industries. Not trying for World domination, but to Provide simple Customer Value and Benefit



## Dust, Bacteria, Virus and Mould (DBVM) Clean Tent Reference Design

### Abstract:

*Flow C<sup>3</sup> Systems* has designed a DBVM Clean Tent, which gives protection from Dust, Bacteria, Viruses, Molds and VOCs (Volatile Organic Compounds). Comprising an advanced, closed loop micro controller, with a novel design to improve the capability and stability of air flow or pressure or air flow and pressure systems, and the Air Manager, Close Coupled Field filter unit. The DBVM Clean Tent is intended for pharmaceutical, biotechnology, microbiology and related markets.

### Description:

*Flow C<sup>3</sup> Systems* has designed a novel flexible isolator, the DBVM Clean Tent. The unit is a self-contained, free-standing product with a user selectable control set. The tent bag can be disposed of when dirty, but the frame and control set is retained for use with subsequent bags. It provides protection from dust, bacteria, viruses and moulds as well as VOCs and has an exceptional single pass kill rate and filtration characteristics. There are two key elements of technology, which come together in the DBVM Clean Tent. 1) An advanced, Patented “*Sizergh*” consisting of a closed loop micro processor controller with a novel design to improve the capability and safety of air flow or pressure or air flow and pressure. 2) A Patented “*Air Manager*” consisting of a Close Coupled Field (CCF) and High Airflow Filter (HAF) unit.

The equipment can provide a Class 1, positive, over pressure or Class 2, negative, under pressure isolation ability in the same isolator tent (depending on whether there is a Class 1 or Class 2 requirement) as follows:

- [A] Selectable 5 - 6.5 Pascal over pressure control,
- [B] Selectable 5 - 40 Pascal over pressure and Selectable flow up to 3 air changes per minute.
- [C] Selectable 5 - 6.5 Pascal under pressure control,
- [D] Selectable 5 - 40 Pascal under pressure and Selectable flow up to 3 air changes per minute.

The micro controller integrates with the latest technology sensors, fans and close coupled field filter media to provide new air management systems solutions. The controller's on board memory capability, allows data logging of selected and achieved performance (e.g. flow, pressure), process data and validates simultaneous control of flow and pressure. It features the display of pressure and flow, as required. The controller has a Serial, USB, Bluetooth or Network connection to PC for selection, adjustment or download of data and control parameters.

### Innovations and advantages:

- An advanced, user configurable, closed loop, micro controller allowing either Class 1 (over pressure) or Class 2 (under pressure) configurations.
- Improved air quality safety to both charge and operator via the “*Air Manager*” Close Coupled Field filter unit.
- Control and performance data logging through serial or wireless interfaces.
- Selected performance, or dynamic response performance, may be adjusted without the need for PLC software validation.
- The filter DeltaP is an order of magnitude less than HEPA filters and ensures a low energy consumption of ~ 30 - 60 Watts total.
- The same equipment can be changed from Class 1 to Class 2 (or 2 to 1) on site.
- It is exempt from CFR21, Part 11 electronic records.
- Enables a sterile under pressure processing environment with a sterile exhaust.
- Ideal for “in-process” use of the new generation of drugs.
- Scalable unit capacity - but targeted at tent enclosure volumes of 1 - 10 m<sup>3</sup>.

## **Current and Potential Domain of Application:**

Pharmaceutical, biotechnology, microbiology and related markets.

## **List of Technology Keywords:**

- \* Data Processing / Data Interchange, Middleware
- \* Industrial Manufacture
- \* Materials Technology
- \* Medicine, Human Health
- \* Cytology, Cancerology, Oncology
- \* Medical Technology / Biomedical Engineering
- \* Pharmaceutical Products / Drugs
- \* Virus, Virology / Antibiotics / Bacteriology
- \* Biology / Biotechnology
- \* Biochemistry / Biophysics
- \* Cellular and Molecular Biology
- \* Enzymology / Protein Engineering / Fermentation
- \* Microbiology
- \* Toxicology
- \* Food Microbiology / Toxicology / Quality Control
- \* Analyses / Test Facilities and Methods
- \* Air Pollution / Treatment
- \* Environmental Engineering / Technology
- \* Radioactive Waste

## **Markets:**

- \* Medical / Health
- \* Recombinant DNA
- \* Other Medical / Health Related
- \* Pharmaceuticals / Fine chemicals
- \* Chemicals and Materials
- \* Industrial Automation
- \* Industrial measurement and sensing equipment
- \* Process control equipment and systems
- \* Industrial Equipment and Machinery
- \* Other industrial equipment and machinery
- \* Air filters and air purification and monitoring equipment
- \* Chemical and solid material recycling
- \* Remediation and material recycling