

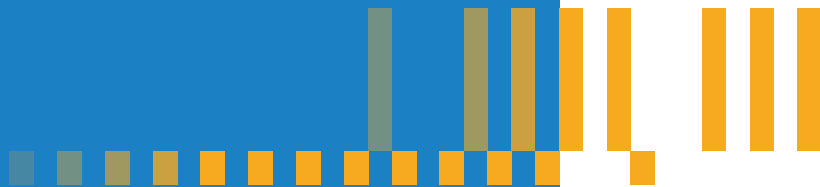


® Knowledge  
Beyond  
Measure.



# Real Measurement Matters in Lab Controls

Lab Control Solutions



# Win with VAV Lab Controls

Laboratories and life science facilities require high levels of control for safety and occupant comfort. Ventilation demands, driven by fume hood exhaust flows and air change rates, mean laboratories can use six times the energy of a similar size office building. Operating one constant volume fume hood uses as much energy over the course of a year as three homes!



## Use Variable Air Volume (VAV) laboratory monitors and controls for:



### Energy Savings

#### **Industry-leading low pressure drop lab designs**

Saving energy requires reducing laboratory airflows to the minimum needed for fume hood containment and ventilation. TSI laboratory control systems use low-pressure drop dampers to further decrease energy use without compromising safety.



### Increased Safety

#### **Direct, accurate measurement of critical parameters**

Laboratories need to maintain the health and well-being of occupants. Potential hazards include chemicals, radioactive materials, and infectious biological agents. TSI fume hood controls and laboratory room controls help facilities optimize containment and ventilation. The products allow designers and owners to comply with regulations, guidelines and standards, including ANSI Z9.5 Laboratory Ventilation.

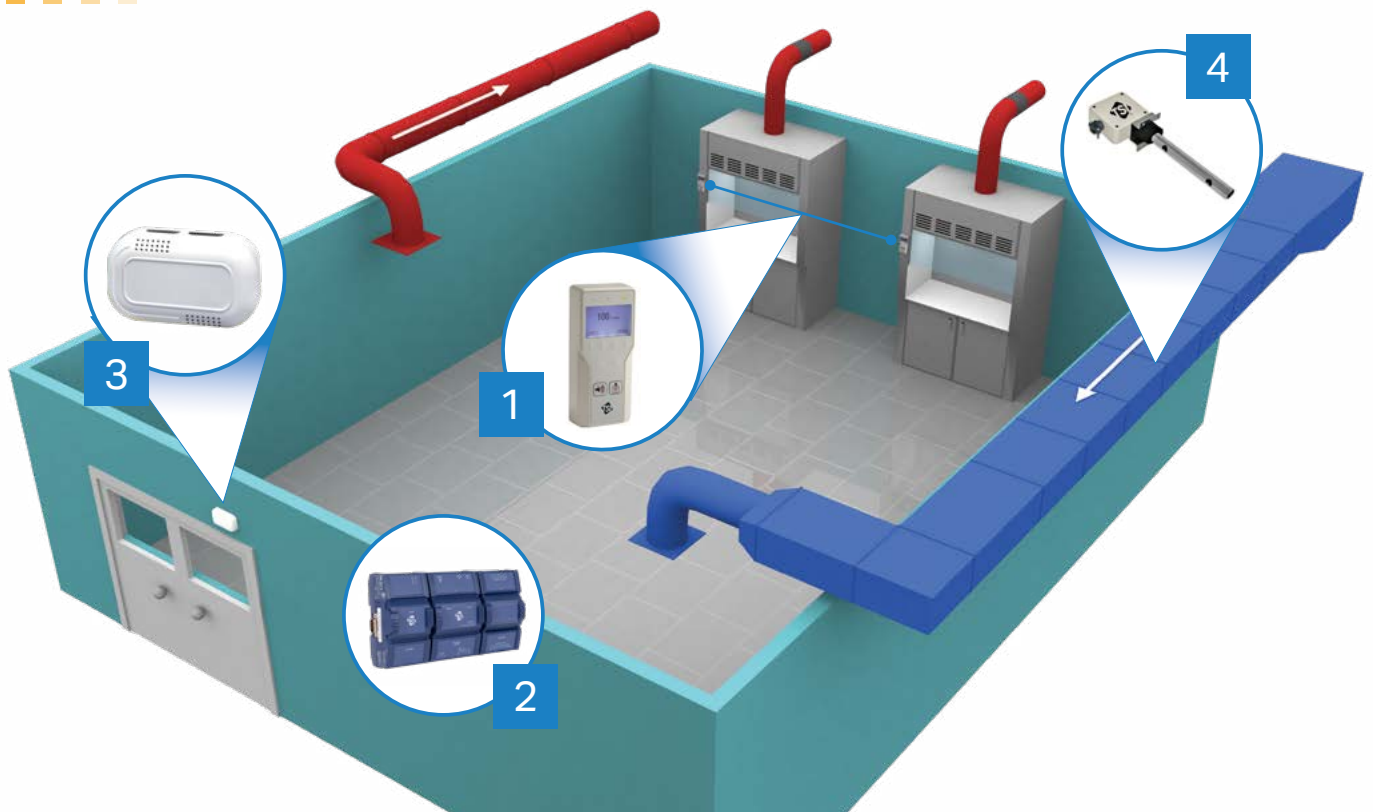


### Cost Savings

#### **Low pressure drop reduces VAV capital costs**

Reducing airflows and system pressure drop minimizes HVAC system power requirements. This allows capital equipment such as fans to be downsized, reducing construction costs.





## Top Choice<sup>1</sup>— TSI VAV Lab Controls

TSI VAV products directly and accurately measure these critical parameters:

- Fume hood face velocity
- Supply airflows
- Exhaust airflows

With TSI's VAV strategy, customers can protect laboratory staff and increase energy efficiency.

1

### TSI Fume Hood Controls

Reduces exhaust airflow to save energy by maintaining constant face velocity.

2

### TSI Lab Room Controls

Reduces energy by minimizing supply airflow to the minimum required for fume hood makeup or ventilation.

3

### TSI Through-the Wall Pressure Sensors

Most accurate way to measure room pressure differential—with proven stability that does not require frequent calibration.

4

### TSI Thermal Flow Stations

Directly measure critical airflows—allowing low-pressure drop dampers to control airflow, saving energy when compared to venturi valve based systems.



<sup>1</sup>) Source: *Laboratories for the 21st Century Best Practices*  
<http://www.nrel.gov/docs/fy05osti/36907.pdf>

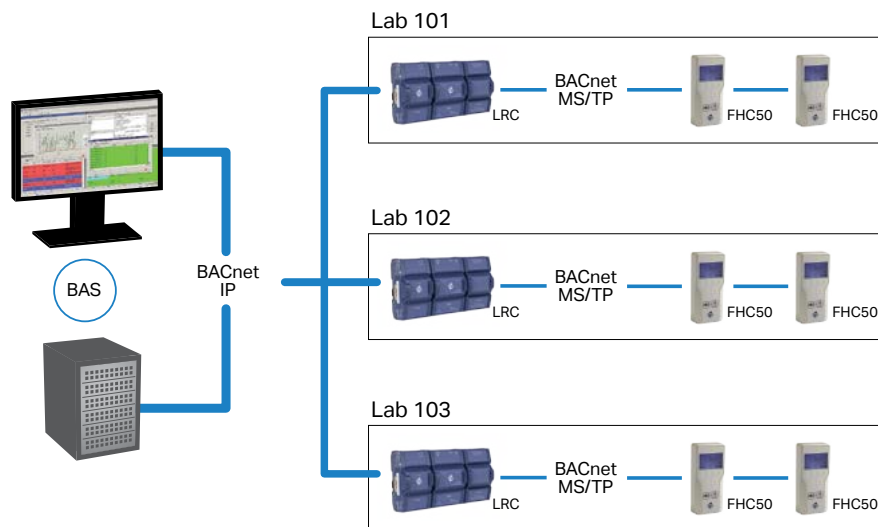
# Seamlessly Integrate

## TSI VAV Lab Controls into Your Building Automation System

Local control of your laboratory spaces is only the first step to optimal safety and building efficiency. Linking the laboratory controls to your Building Automation System (BAS) enables the implementation of building-wide strategies.

- Night setback of flow rates and temperatures to reduce operating expenses
- Automated data collection, trend analysis and report generation
- Reports validate safe operation of labs and trend energy consumption
- Remote diagnostics

TSI's Laboratory Control Products are easily integrated into your BAS system to record alarms and trend data. Our laboratory controls tie seamlessly into BAS systems using the BACnet® protocol.



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