

W O R L D W I D E



Innovation

Service

Experience



HSI offers our CP series blower and exhauster control systems for all of your air and gas applications

Offering the most efficient blower is only part of maximizing your total system efficiency. Without proper control systems in place, maximum efficiency is not achieved. Our engineers have developed our own copyrighted control logic to operate and protect our MC – Series (Multistage Centrifugal) and HT – Series (High Speed Turbo) blower products. In addition, HSI also provides complete process control systems to provide even more power savings.

HSI controls are pre-engineered as a working system and are completely “plug compatible” with all HSI products. In addition to our standard controllers, our engineers can create a custom control system for your next application offering the most efficient power consumption over varying performance demands. Please call our applications team to consult on your next project.

HSI offers pre-engineered control systems to operate a wide variety of applications.

Our standard controllers include the models shown below. Please consult each controller’s technical sheet for further details.

Local Control Systems:



HSI CP 1000

Provides basic surge protection and motor overload protection without the use of a PLC. This is an inexpensive option to prevent a blower from entering surge.



HSI CP 1100

Offers surge and motor overload protection, simple PID loop control options for inlet valve control or bleed valve control as well as several combinations of analog and digital inputs such as temperature and vibration.



HSI CP 2100

This PLC controller with HMI touch screen operates our MC Series blowers with modulated inlet valve control to regulate flow or bleed valves in vacuum applications. Protection includes surge, vibration, and bearing temperature of the blower and motor. With the addition of monitoring inlet temperature, a dynamic surge protection set point can offer more turn down than traditional controllers.



HSI CP 3100

Incorporates a unique control method to operate our MC Series blowers with the use of a variable frequency drive. HSI has developed a multi-algorithm program that calculates flow rates more accurately than using traditional flow meters and does so more reliably without the need of frequent calibration. In addition, the efficiency of the blower operating at partial loads is greatly improved (more than 20% over inlet valve control). An added benefit is increased turndown or flow range as compared to traditional systems. Flow rate can typically be reduced to 35% of maximum flow.



Multiple Blower Sequencing:

Process Control Systems:



HSI CP 4100

This master control panel is designed to sequence multiple blowers operating on a common discharge header. The controller can automatically turn blowers on and off as well as regulate the total output flow rate to maintain a process input variable (flow, pressure, or other) as defined by the specific application. This unit is plug and play capable with HSI 1100, 2100, 3100, or HT Series (High Speed Turbo) controllers.



HSI CP 5100

This process control panel incorporates all the features of the CP 4100 but also takes control of the entire application process. Used extensively in water and wastewater applications with multiple aeration basins, this controller operates multiple actuated flow valves to regulate flow to multiple points of use. Ask HSI about our proprietary flow control methodology and how it can save money on your next application.

Process Control

Our control systems operate to satisfy or maintain any process input variable such as flow, pressure, or dissolved oxygen level, among many others. What makes HSI unique is we can accomplish this while maximizing energy efficiency and reliability of the blower system as a whole. By understanding the operation and control of the blowers, HSI has seamlessly incorporated the process control. This gives HSI a competitive edge over any third party controls provider on any project and also keeps single point system integration responsibility.

Operating on a pressure control set point?

HSI has developed a flow based controlled system to replace older antiquated pressure controlled systems with substantial energy savings. Creating excess pressure in a system wastes energy. By switching to a flow based demand system, your application will receive the appropriate flow as required by the process rather than building up pressure to meet a setpoint. HSI can save you 4-7% energy in a typical application with this process! Let us show you if this is right for your application.

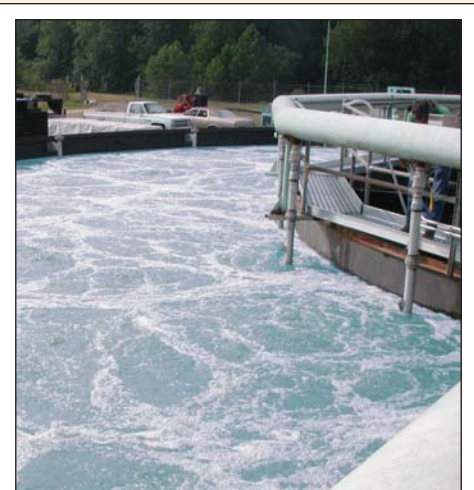
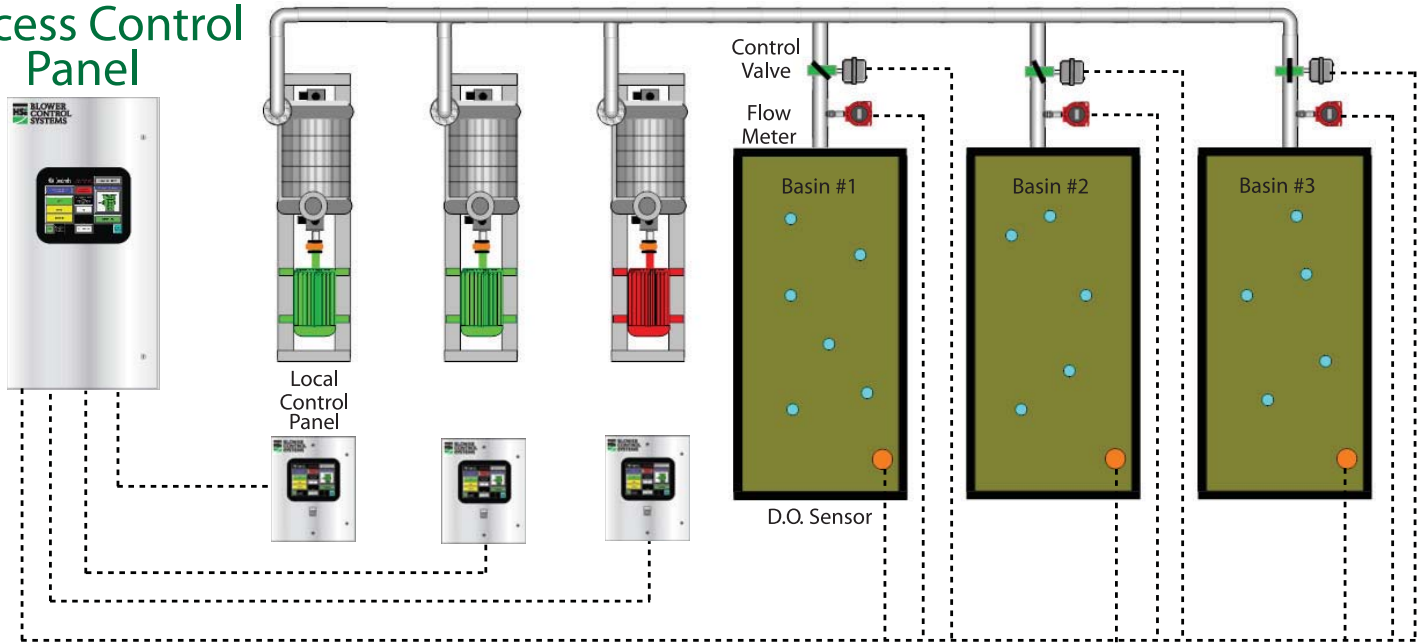
ONE SOURCE SOLUTION:

HSI offers total system responsibility by offering not only the blowers and controls but all the control devices together as a pre-engineered and guaranteed system. Take advantage of 30 years experience implementing 5,000 blower installations on your next project. We will design and specify the entire system.

Additional control devices may include:

- Motor Starters
- Variable Frequency Drives
- Actuated Butterfly Valves
- Pressure Sensors
- Temperature Sensors
- Vibration Sensors
- Dissolved Oxygen Probes
- Ammonia Sensors
- ORP Sensors
- Flow Meters
- Current Transducers
- SCADA Interface

CP 5100 Process Control Panel



Water and Wastewater Applications

- Basin Aeration
- Air Scouring
- Digester Gas
- Filter Backwash Systems
- Grit Chamber Aeration
- Lagoon Aeration
- Wastewater Treatment
- SBR/MBR

Standard HSI Controller Capabilities

Functions/Options	CP 1000	CP 1100	CP 2100	CP 3100	CP 4100	CP 5100
Number of Units	1	1	1	1	2+	2+
Blower Surge	•	•	•	•	•	•
Motor Overload	•	•	•	•	•	•
Analog Based Control	•					
PLC Based Control		•	•	•	•	•
Two Line Text Screen		•				
Touch Screen HMI			•	•	•	•
Ethernet/Network Communication		•	•	•	•	•
SCADA Capable			•	•	•	•
Modem Connection		•	•	•	•	•
Inlet Valve Flow Control		•	•	•		
Temperature Compensated Surge Protection		•	•	•		
Modulating Surge with Inlet Temperature Compensation Control		•	•	•		
Bleed Valve Control (Vacuum)		•	•	•		
Temperature Monitoring						
Blower Bearing Temperature Switch	•	•	•	•		
Blower Bearing Temperature Transmitter		•	•	•		
Blower Inlet and Outlet Temperature Transmitter		•	•	•		
Motor Bearing Temperature Transmitter		•	•	•		
Motor Winding Temperature Transmitter		•	•	•		
Vibration						
Vibration Switch on Bearing Housing	•	•	•	•		
Vibration Transmitter on Blower Bearings		•	•	•		
Vibration Transmitter on Motor Bearings		•	•	•		
Pressure						
Inlet Filter Pressure Differential Switch	•	•	•	•		
Inlet Filter Pressure Differential Transmitter		•	•	•		
Inlet Vacuum		•	•	•		
Outlet Pressure		•	•	•		
Inlet Pressure		•	•	•		
System Control						
VFD Control with In-Line Flow Meter			•			
Inlet Throttle Valve and VFD Control				•		
VFD Control without Flow Meter				•		
Dissolved Oxygen Control Loop			•	•	•	•
Pressure/ Vacuum Control Loop			•	•	•	•
Flow Control Loop			•	•	•	•
Sequencer of Multiple Units					•	•
Mostly Open Valve Control Logic						•
Process Controls–Wastewater Treatment						•
Motor Starter and Control Combination						
Integrate with Full Voltage or Soft Starter	•	•	•			
Integrate with Variable Frequency Drive Motor Starter			•	•		

HSI offers custom configurations in addition to our standard controllers to meet the most exacting standards. HSI controllers and options listed above are UL, CSA, CE approved. Enclosures are per NEMA 3R,4,4X,7, or 12. All units can be displayed in Metric or English units. Languages supported are English, Chinese, or Spanish as standard — Custom languages are available.



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