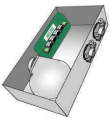


Product Specification



Intelli-Hood System Overview

AIR PURGE UNITS
Miniature blowers send air into Optic Sensor housings to prevent smoke and grease from collecting on lenses.



SYSTEM CONTROLLER
Receives input from the User Interface(s) and Hood Controller(s) to control the outputs for the VFDs



HOOD CONTROLLER
Oversees Temperature and Optic Sensors on each hood and sends sensor data to the System Controller via RS-485 communication.



TEMPERATURE SENSOR
Monitors the exhaust air temp. in the duct and sends a signal to the Hood Controller to vary fan speed in proportion to heat load.



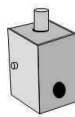
GRAPHICAL USER INTERFACE
Provides switches for operation of hood lights and fans, bypass, monitoring LEDs and programming.



VFDs
Variable Frequency Drives receive signals from the Hood Controller to control the speed of the fans based on heat and smoke load.



OPTIC SENSORS
Monitor the presence of smoke and vapors inside the hood. Send a signal to the Hood Controller to increase fan speed during cooking.



System Controller

FUNCTIONAL DESCRIPTION

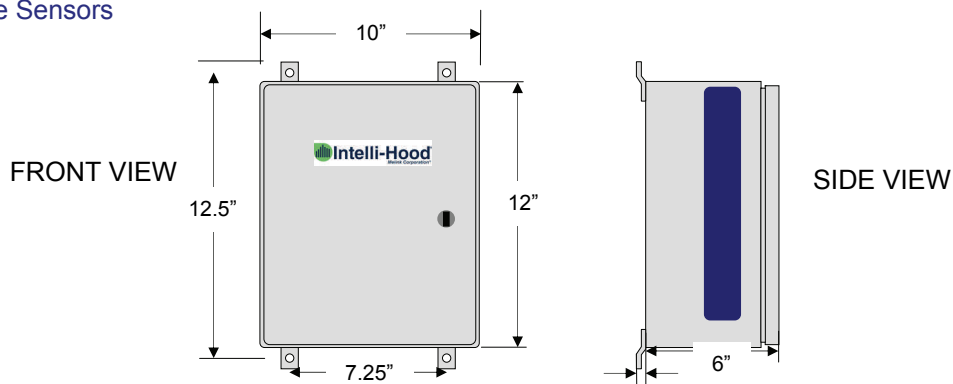
The System Controller controls the lights and fans for up to 39 Hood Controllers. It is typically mounted above the ceiling and communicates between the hood sensors and VFDs via plug-n-play cables. It is also connected to a GUI mounted on the front face of one of the hoods for easy user interface.

CONTROL SPECIFICATIONS

- Painted enclosure for durable construction and smooth finish
- Communicates to hood controller, Graphical User Interface, and Sensors via proprietary RS-485 Protocol
 - May communicate with up to (39) Hood Controllers, (10) Graphical User Interface Devices, (10) Button Only Keypads, (10) Auxiliary Power Supplies, and (10) Auxiliary Light Controllers. Some limitations apply.
- Communicates to Variable Frequency Drives via Modbus Protocol
 - Refer to VFD submittal sheet for more information
 - Supports up to 64 VFDs
- Programmable I/O: (3) Digital Inputs, (4) Digital Outputs, (1) Analog Output, (1) Analog Input.
- Adjustable Temperature vs. Fan Speed Curve
- Automatic On/Off based on Hood Temperature or Clock Schedule
- Versatile programming parameters for setting up exhaust and supply airflow control
- Removable Memory stores setup files and operational history data
- BACnet over TCP/IP Interface
- Internet-based Service Application for programming and monitoring
- Automatic notification of faults/alarms via BACnet and email

ELECTRICAL SPECIFICATIONS

Input Voltage : 120 V AC or 220 V AC
 Frequency : 50 Hz to 60 Hz +/- 3%
 Power Consumption..... 170 W
 Ambient Temperature : 41°F up to 104°F
 Hood Lights : 120 V AC to 220 V AC 15 A max
 Low Voltage plenum-rated, shielded cables to VFD(s), Optic Sensors, APU(s) and Temperature Sensors



Hood Controller

FUNCTIONAL DESCRIPTION

The Hood Controller oversees Temperature and Optic Sensors on each kitchen hood and sends the sensor data to the System Controller via RS-485 communication.

MECHANICAL FEATURES

- Galvanized Steel Enclosure, 7"x7", 2.1" tall
- Temperature Rating: 0 to 50°C, 32 to 120°F
- Steel Beam Clamps for installation on hoods or other mechanical structures above hood.
- 4 conduit knockouts for connections of Intelli-Hood Hood Network cables

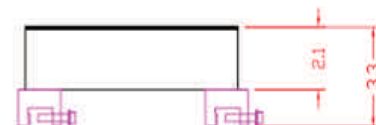
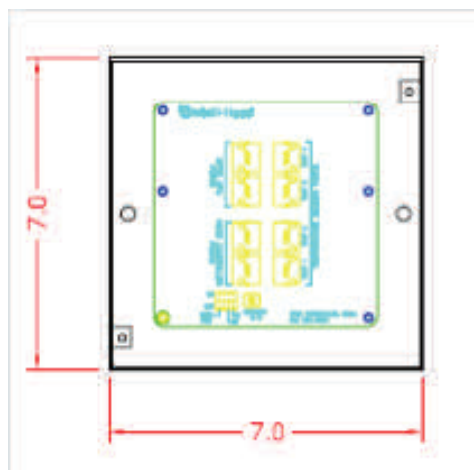
ELECTRICAL SPECIFICATIONS

Input Voltage: 24 VDC via the Hood Sensor Network

Power Consumption:

- A fully loaded Hood Controller with four temperature sensors, two air purge units, and one set of optic sensors consumes approximately 15W.

FRONT VIEW



SIDE VIEW

Graphical User Interface

FUNCTIONAL DESCRIPTION

- The Graphical User Interface (GUI) is the human interface point of the Intelli-Hood system. FANS and LIGHTS buttons provide interface points of kitchen staff to control the hoods. A full-color screen displays the status of the fans and sensors. Setup buttons provide a means of programming the system.
- A System Controller may have up to ten (10) GUI Keypads connected to it. Programmable parameters allow the Setup Technician to dictate GUI and Hood relationships.
- Every System Controller is required to have at least one (1) GUI device connected to it to allow for human interface to diagnostics and programming parameters.

GENERAL SPECIFICATIONS

- Full Color Screen: 2.5" diagonal, QVGA resolution, displays operating status and programming menus
- FANS Button: changes system from Active Mode (fans running) to Standby Mode (fans off)
- LIGHTS Button: changes state of line voltage relays which may be used to control Hood Lights circuits.
- Soft Keys and Directional Buttons: allow user to boost fan speeds to full speed, access programming menus, access diagnostic and help screens.
- Stainless steel cover plate (304L) for durable construction and smooth finish
- Synthetic membrane keypad for water protection

ELECTRICAL SPECIFICATIONS

- Low voltage : 24Vdc
- Plug-n-play connection

HOUSING DIMENSIONS



Temperature Sensors

FUNCTIONAL DESCRIPTION

- A platinum resistive temperature device (RTD) sensor encased in a stainless steel tube. Threaded housing is designed to be assembled into UL-listed “Quick-Seal” exhaust duct fittings. Temperature Sensors are wired to the Hood Controllers via Hood Network Cables.

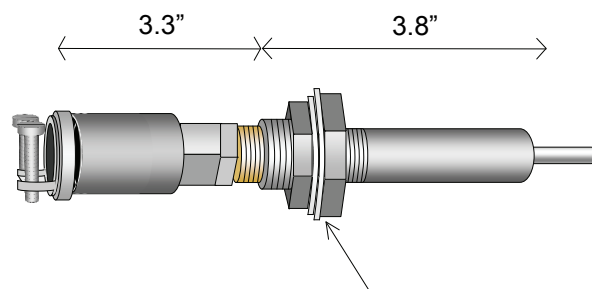
GENERAL SPECIFICATIONS

- Stainless Steel Probe: 0.25” outside diameter, 2 lengths available 4.75” and 1.75”
- Brass Body, ½” external pipe thread
- 8 pin, RJ-45 connector
- Temperature Rating: 0 to 535°C, 32 to 1000°F

ELECTRICAL SPECIFICATIONS

- RTD Rating: 100 Ohms with 0.385 platinum coefficient
- Electrical Connection: Plug-n-play connection

HOUSING DIMENSIONS



Recommended duct cut-out: 1.25” diameter.

Optic Sensors

FUNCTIONAL DESCRIPTION

The Optic Sensors consist of an Emitter and a Receiver which are installed on opposite ends of the kitchen hood. An infrared beam spans the length of the hood to detect any smoke or other vapors generated by the cooking appliances. Upon detection, a signal is sent to the System Processor which automatically ramps the associated fan(s) to 100% speed until the effluent is evacuated. Optic Sensors are wired to the Hood Controllers via Hood Network Cables.

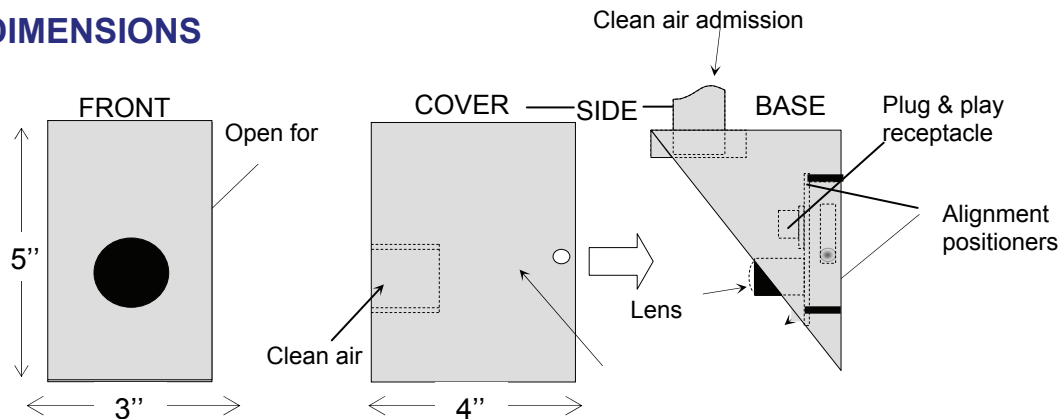
MECHANICAL SPECIFICATIONS

- Stainless Steel Housing for durable construction and smooth finish
- Spring push button latches hold the Cover to the Base Bracket for easy removal and cleaning.
- Optical Span: 3 to 40 feet
- Conformal-coated circuit boards and water-tight cable connectors
- Temperature Rating: 0 to 85°C, 32 to 185°F

ELECTRICAL SPECIFICATIONS

- Infrared Detection
- Response Time: 0.2 seconds
- Auto-calibration: Every day at start-up or 24 hours
- Ambient temperature: Max 105F purge air
- Cable plugs provided for quick and easy installation
- Low Voltage: 24vdc

DIMENSIONS



Air Purge Unit

FUNCTIONAL DESCRIPTION

- The Air Purge Unit (APU) consists of a miniature blower in a steel box, mounted on each end of the hood above the optic sensors. The purpose of the APU is to pressurize the optic sensors housings with clean air to prevent grease vapors from fouling the lens. The blowing air also cools the optic circuit boards.
- The stainless steel conduit pipe that connects the APU and Optic Sensor provides a path for the air flow and optic sensor control cable.

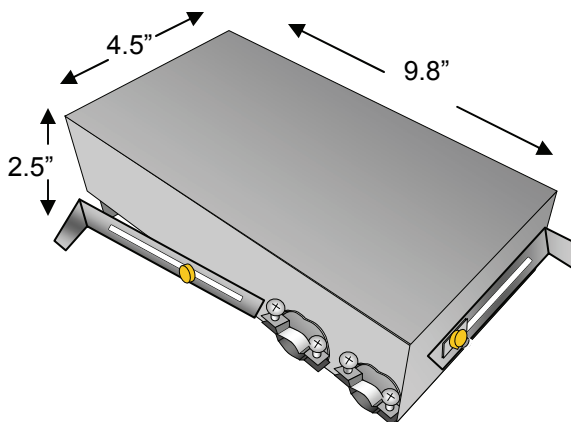
MECHANICAL SPECIFICATIONS

- Enclosure constructed of 18 gauge galvanized steel
- Adjustable support leg
- Blower fan bearings permanently lubricated
- Temperature Rating: 0 to 50°C, 0 to 125°F

ELECTRICAL SPECIFICATIONS

- Input Voltage: 12 VDC from the Hood Controller, via Hood Network Cable
- Power Consumption: Approximately 7W

HOUSING DIMENSIONS



Variable Frequency Drive (VFD)

FUNCTIONAL DESCRIPTION

The electronic motor starter is a variable frequency drive (VFD) which is used to control the exhaust and supply fan motors. The VFD modulates the speed of the fan motors by varying the output voltage and frequency based on a serial RS-485 signal received from the Input/Output Processor. The VFD also sends a feedback signal to the Input/Output Processor in order for the keypad to display the actual speed of the motor.

MECHANICAL SPECIFICATIONS

- NEMA 1 Enclosure.
- Soft-start capability.
- Digital keypad displays output frequency, current, voltage, and allows programming for field modifications.
- Protective Functions: motor overload, overheating, overcurrent, overvoltage, output shorts, etc.
- High and low frequency limiters.
- Adjustable torque boost.



ELECTRICAL SPECIFICATIONS

Input Voltage : 200-240 V/1 ϕ AC, 200-230 V/3 ϕ AC, 380-480 V/3 ϕ AC, or 460-600 V/3 ϕ AC
 Input Frequency :50 Hz to 60 Hz +/- 3%
 Output Voltage :80-240 V/ 3 ϕ AC or 160-480 V/ 3 ϕ AC
 Ambient Temperature :14°F up to 122°F
 Humidity :20%-95% relative humidity (non-condensing)