STREIVOR™ AIR SYSTEMS

DemandAire Platinum

Kitchen Ventilation Control System

Installation and Operations Manual

Striving for Excellence

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General Information

Acronyms

ARTD	Ambient Resistance Temperature Detector
BMS	Building Management System
CKV	Commercial Kitchen Ventilation
DCKV	Demand Control Kitchen Ventilation
DCP	DemandAire Control Panel
EC	Electronically Commutated
ECM	Exhaust Collar Mounted
FSS	Fire Suppression System
HCM	Hood Canopy Mounted
HMI	Human Machine Interface
IHF	Internal Hood Fan
MBD	Motorized Balancing Damper
MUA	Make Up Air
PLC	Programmable Logic Controller
PTC	Programmable Time Clock
RTD	Resistance Temperature Detector
VFD	Variable Frequency Drive

General Information

Pre-Installation Precautions

WARNING

PRIOR TO MAKING ANY ELECTRICAL CONNECTIONS TO THE CONTROL PANEL, READ AND UNDERSTAND THIS ENTIRE INSTALLATION AND OPERATIONS MANUAL. ALL WORK ON THE CONTROL PANEL SHOULD BE PERFORMED BY QUALIFIED CONTRACTORS IN ACCORDANCE WITH ALL APPLICABLE PREVAILING CODES AND STANDARDS.

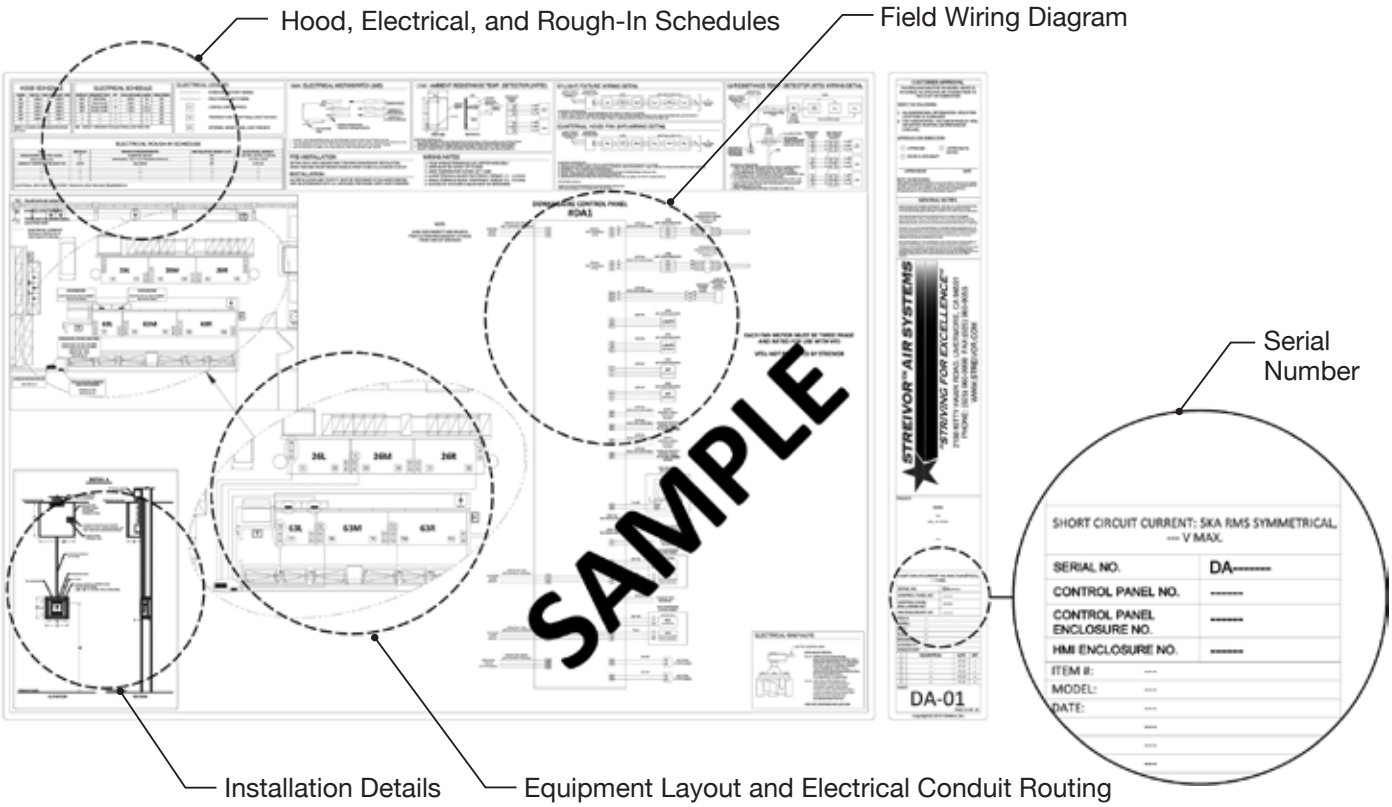
THE CONTROL PANEL HAS MULTIPLE ELECTRICAL CONNECTIONS. VERIFY THAT ALL POWER HAS BEEN DISCONNECTED TO THE CONTROL PANEL PRIOR TO WORKING ON OR NEAR THE CONTROL PANEL. LOCK OUT / TAG OUT ALL OF THE DISCONNECT SWITCHES OR CIRCUIT BREAKERS TO PREVENT ACCIDENTAL POWER UP.

ALL ELECTRICAL WIRING AND CONNECTIONS TO THE CONTROL PANEL SHALL BE IN ACCORDANCE WITH THE PREVAILING CODES, THE NATIONAL ELECTRICAL CODES, AND ANSI/NFPA70.

VERIFY THAT THE SERIAL NUMBER ON THE WIRING DIAGRAM (SEE SAMPLE DRAWING) PROVIDED WITH THE CONTROL PANEL MATCHES THE SERIAL NUMBER OF THE CONTROL PANEL BEFORE USING THE WIRING DIAGRAM FOR REFERENCE.

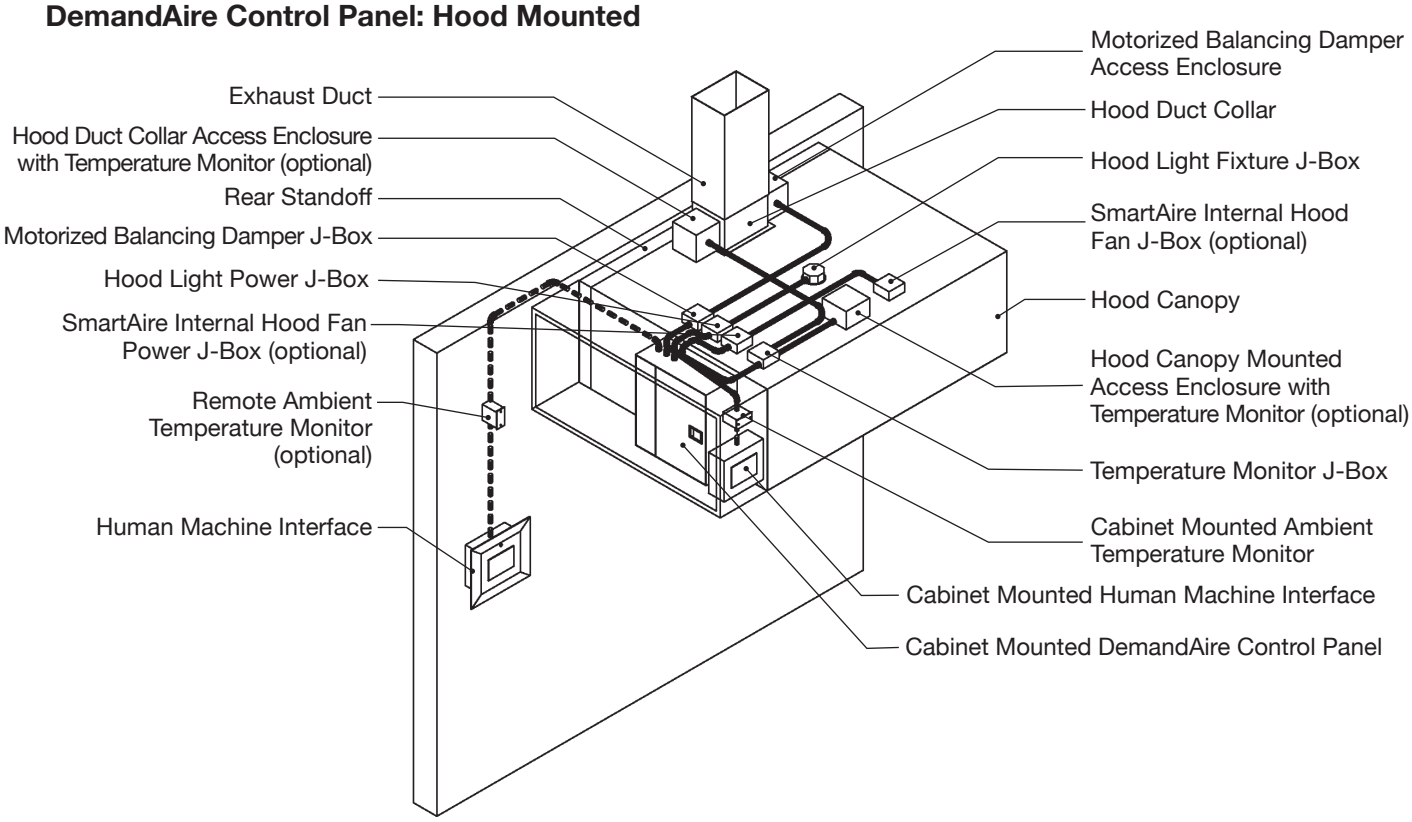
VERIFY THAT THE VOLTAGE AND WIRE AMPERAGE CAPACITY AND WIRE INSULATION IS IN ACCORDANCE WITH THE CONTROL PANEL NAMEPLATE.

DemandAire Control Panel Drawing Sample

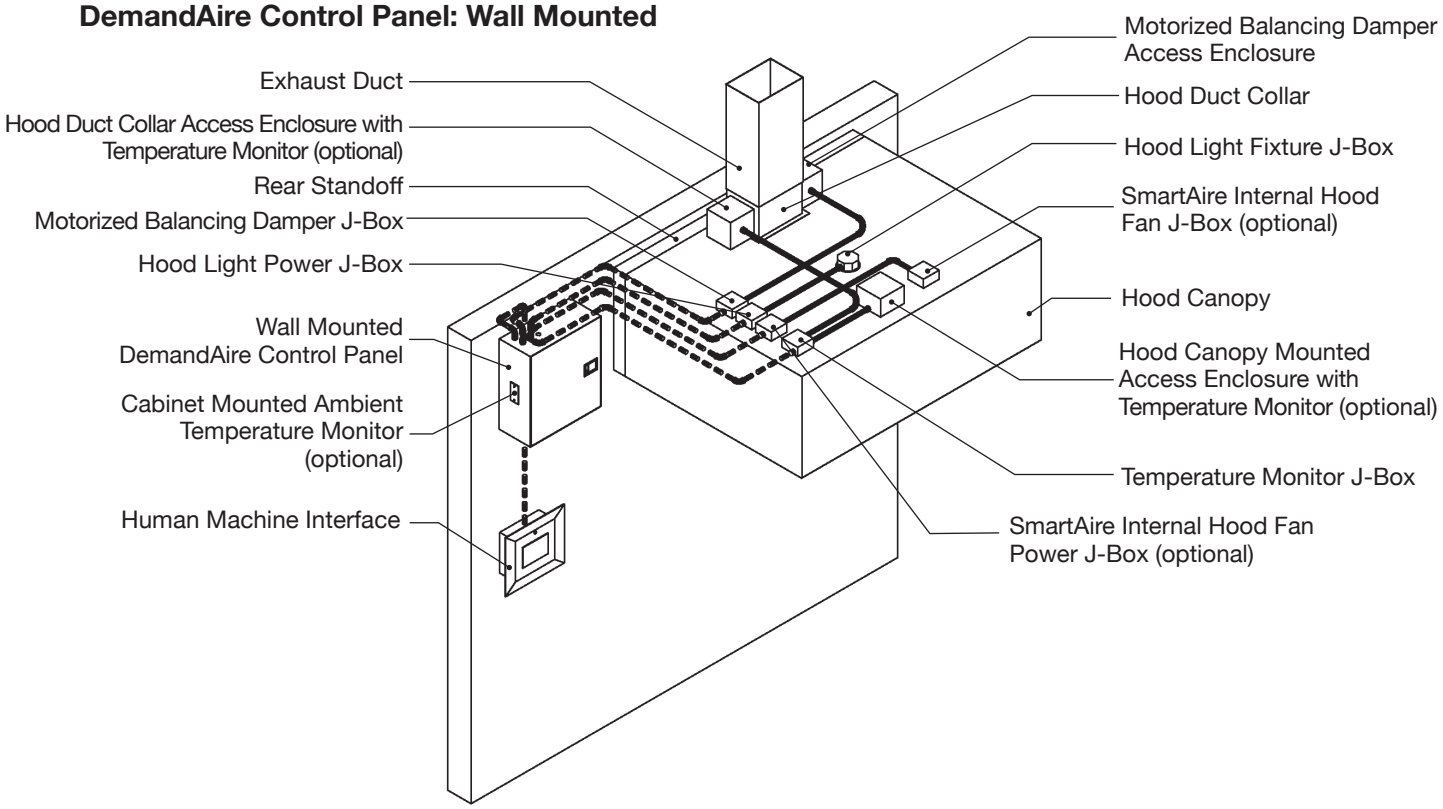


General Information

DemandAire Control Panel: Hood Mounted



DemandAire Control Panel: Wall Mounted



Installation Procedures

Control Circuit Input Power Wiring

a. Verify that all supply power to the control panel is locked out and tagged out.
b. Verify that the circuit breaker amperage is sized correctly for the control circuit per DemandAire Control Panel (DCP) Drawings.
c. Connect 120 VAC single phase power to the terminal blocks in the control panel labeled *H*, *N*, and *Ground* (*Figure 1*).
d. The wires should be torqued to 1.5-1.8 N•m at the terminal blocks.

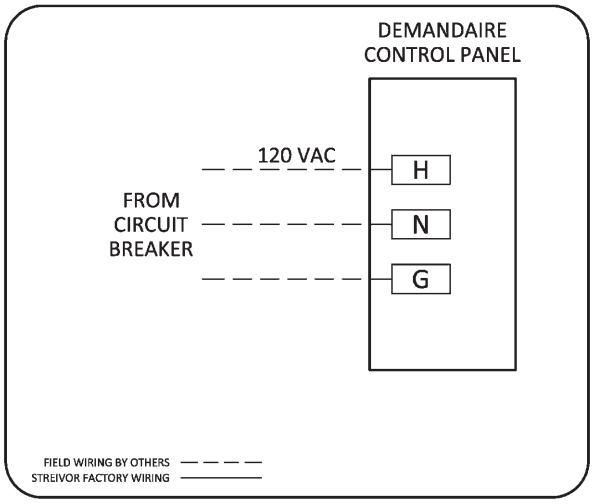


FIGURE 1: Control Circuit Input Power Wiring

Fan Control Signal Wiring (VFDs Not Provided by Streivor)

a. Verify that all power to the control panel is locked out and tagged out.
b. Connect the terminal blocks in the control panel designated for the 4-20mA or 0-10VDC fan control signals to the appropriate external destination (*Figure 2*) (i.e. VFDs, BMS, EC Motors, VAV, etc.)
c. Refer to the DCP Drawings for more detail.
d. The wires should be torqued to 0.6-0.8 N•m at the terminal blocks.

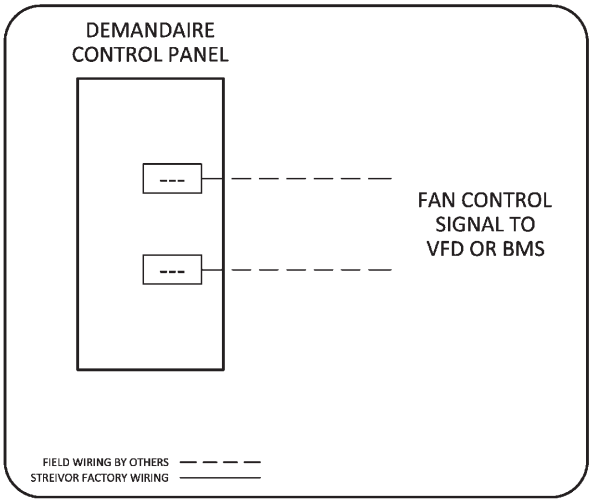


FIGURE 2: Fan Control Wiring

Installation Procedures

Motor Circuit Input Power Wiring (VFDs Provided by Streivor)

a. Verify that all power to the control panel is locked out and tagged out.
b. Verify that the circuit breaker amperage is sized correctly for each motor input power circuit.
c. Verify that the voltage and phase of each motor circuit is correct per the DCP Drawings.
d. Connect input power to the input power terminal blocks as shown on the DCP Drawings (*Figure 3*).
e. The wires should be torqued to 1.5-1.8 N•m at the terminal blocks.

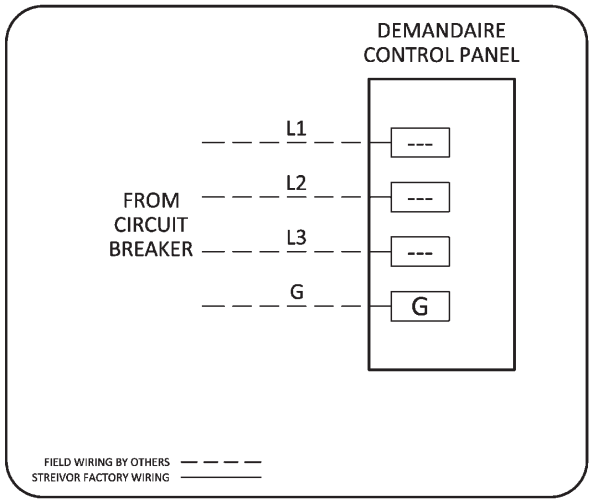


FIGURE 3: VFD Input Power Wiring

Motor Circuit Output Power Wiring (VFDs Provided by Streivor)

a. Verify that all power to the control panel is locked out and tagged out.
b. The output terminals located on the VFD(s) have been pre-wired to the designated output power terminal blocks in the control panel. Connect the output power terminal blocks to the designated fan motor(s) as shown on the DCP Drawings (*Figure 4*).
c. The wires should be torqued to 1.5-1.8 N•m at the terminal blocks.

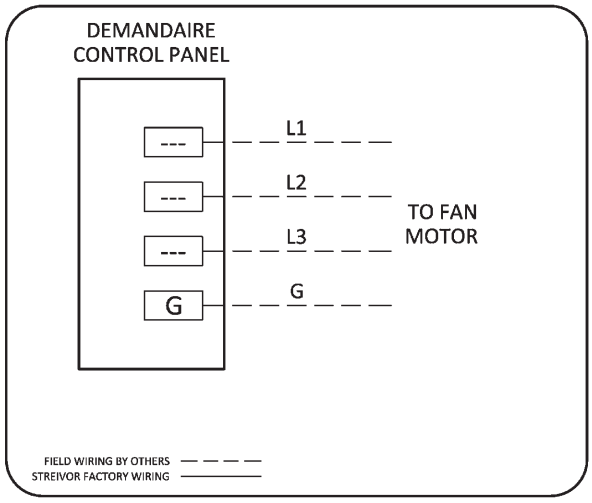


FIGURE 4: VFD Output Power Wiring

Installation Procedures

Optional: Run Signals (Fans)

a. Verify that all power to the control panel is locked out and tagged out.
b. Connect the terminal blocks in the control panel designated for fan run signals (dry contacts) to the appropriate external destination (*Figure 5*) (i.e. VFDs, BMS, dampers, etc.)
c. Refer to DCP Drawings for more detail.
d. The wires should be torqued to 1.5-1.8 N•m at the terminal blocks.

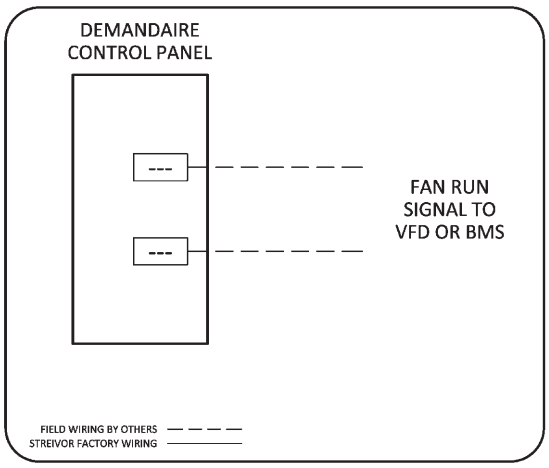


FIGURE 5: Optional: Run Signals (Fans)

Light Power Circuit Wiring

a. Verify that all supply power to the control panel is locked out and tagged out.
b. Connect 120 VAC single phase power from terminal block *11* (hot), terminal block *12* (neutral), and *ground* in the control panel to the wires labeled “Lights” in the junction box on the hood (*Figure 6*).
c. The wires should be torqued to 1.5-1.8 N•m at the terminal blocks.

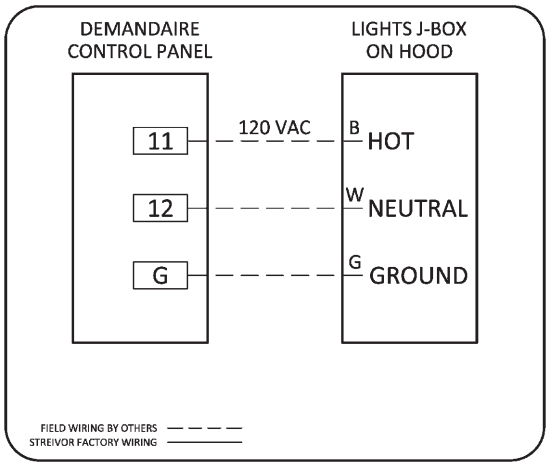


FIGURE 6: Light Power Circuit Wiring

Installation Procedures

Internal Hood Fan (IHF) Power Circuit Wiring for SmartAire Technology Hoods

Per NFPA 96 Section 8.3.2: When its fire-extinguishing system discharges, makeup air supplied internally to a hood shall be shut off.

a. Verify that all power to the control panel is locked out and tagged out.
b. Connect 120 VAC single phase power from terminal block 3 (hot), terminal block 4 (neutral), and ground in the control panel to the wires labeled “IHF” in the junction box on each hood (*Figure 7*).
c. Internal Hood Fan power to terminal blocks 3 and 4 will be automatically shunt during a fire suppression system activation to comply with NFPA 96 Section 8.3.2.
d. The wires should be torqued to 1.5-1.8 N•m at the terminal blocks.

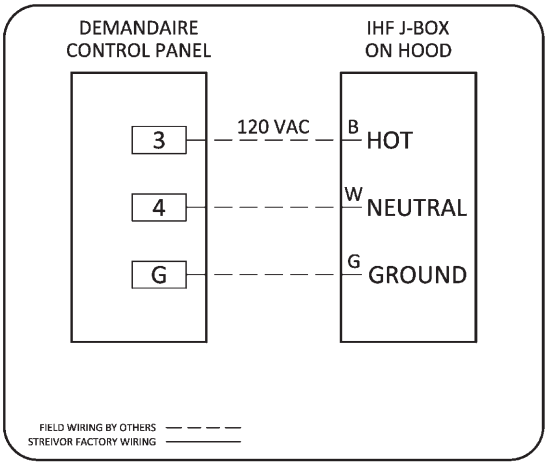


FIGURE 7: Internal Hood Fan Power Circuit Wiring

Installation Procedures

Fire Suppression System (FSS) Switch Circuit Wiring

a. Verify that all power to the control panel is locked out and tagged out.
b. Locate the FSS switch in the FSS control panel. The FSS switch (also referred to as microswitch) shall have one set of single-pole-double-throw contacts (*Figure 8A*).
c. Connect the terminal blocks in the control panel to the FSS Switch(es) (*Figure 8A)*. The building alarm circuit must be connected to the switch with lugs (*Figure 8B)*.
d. Connect the building alarm circuit to the terminal blocks designated for the building alarm in the DCP (*Figure 8A*).
e. Refer to the DCP drawings for more detail regarding wiring additional FSS switches.
f. The wires should be torqued to 1.5-1.8 N•m at the terminal blocks.

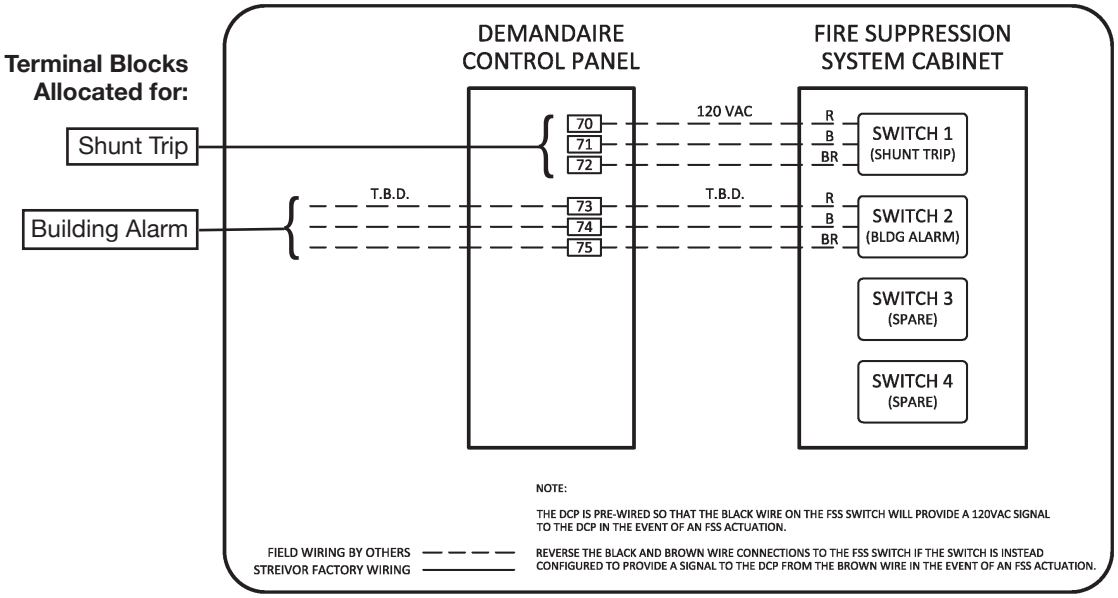


FIGURE 8A: Fire Suppression System (FSS) Switch Circuits

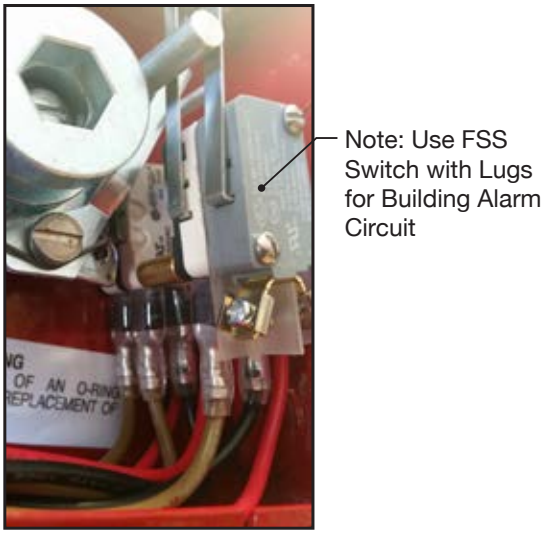


FIGURE 8B: FSS Switch for Building Alarm Circuit

Installation Procedures

Ambient Resistance Temperature Detector (ARTD) Wiring (Cabinet Mounted)

a. ARTDs that are Control Panel or Cabinet Mounted are pre-wired by the factory. No field connections are required.
b. Refer to DemandAire drawings to verify ARTD installation location.

Ambient Resistance Temperature Detector (ARTD) Wiring (Remote)

a. Verify that all power to the control panel is locked out and tagged out.
b. The ARTD requires a 2x4 J-Box to which it may be directly mounted (*Figure 10*).
c. Connect the terminal blocks labeled *T0-A, T0-B, etc.,* in the control panel to the ARTD using UL-Listed 22 AWG Three Strand Shielded Communication Cable (*Figure 9*). Connect the black lead on the monitor to the red wire leading to the DemandAire control panel. Connect one of the brown leads on the monitor to the black wire leading to the control panel and connect the other brown lead on the monitor to the white wire leading to the control panel (*Figure 10*).
d. The ARTD should be installed in the location shown on the DemandAire drawings or in the kitchen space at least 80" above finished floor (A.F.F.), away from direct sunlight, makeup air diffusers airstreams, and other sources of heated or cooled air. The ARTD should be located within 20 ft. of at least one hood controlled by the DemandAire system.
e. The wires should be torqued to 0.6-0.8 N•m at the terminal blocks.

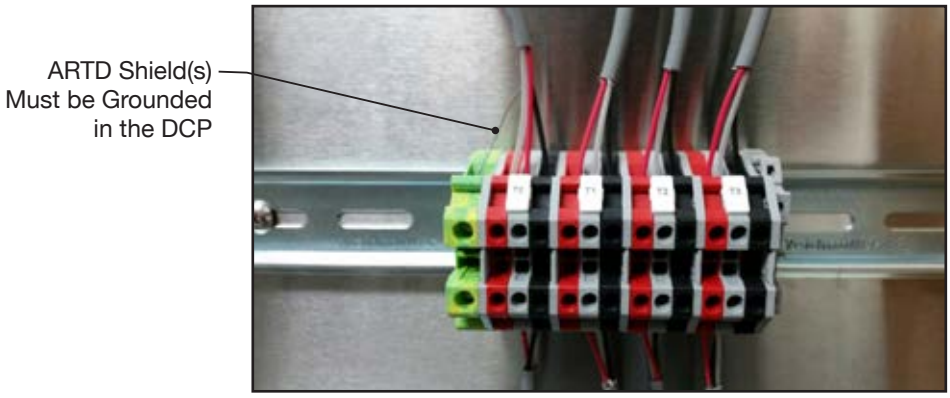


Figure 9: ARTD Wiring Connections in DCP

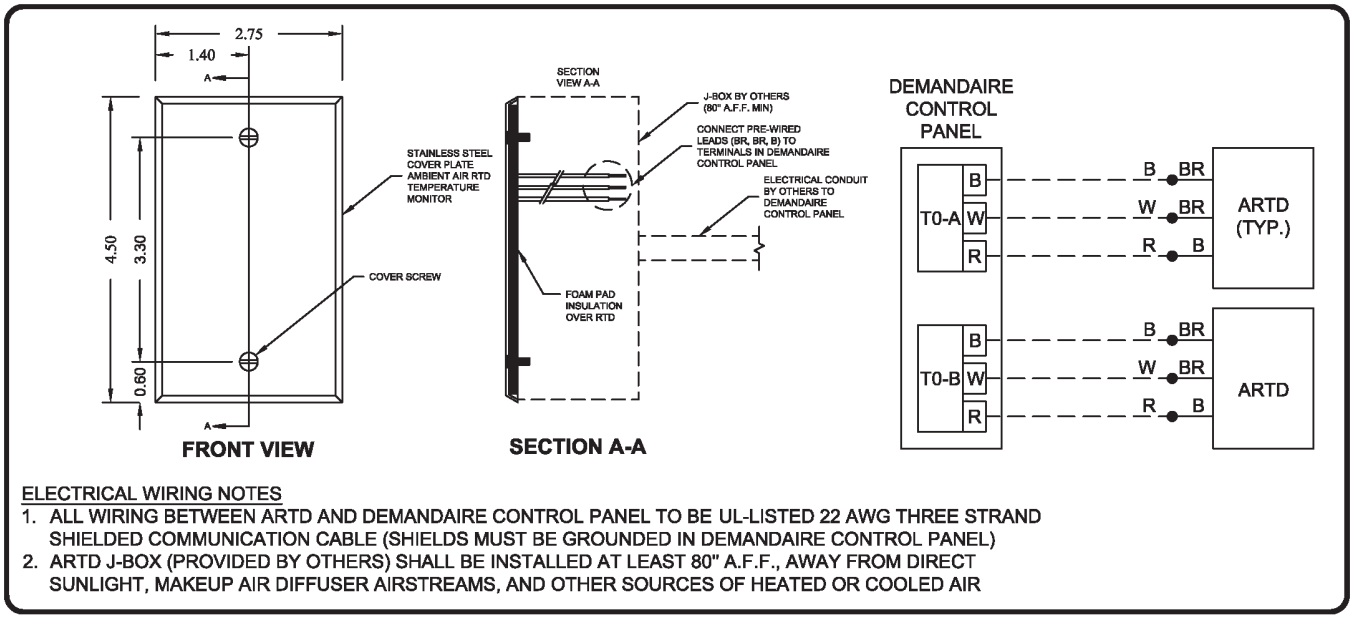


FIGURE 10: ARTD Installation Details

Installation Procedures

Hood Canopy and/or Duct Collar Temperature Monitor Wiring

a. Verify that all supply power to the control panel is locked out and tagged out.
b. Connect the terminal blocks labeled *T1, T2, T3, etc.,* in the control panel to the corresponding terminal blocks in the J-Box on the hood using the UL-Listed 22 AWG Three-Strand Shielded Communication Cable (*Figure 11A, 11B*).
c. The wires should be torqued to 0.6-0.8 N•m at the terminal blocks.

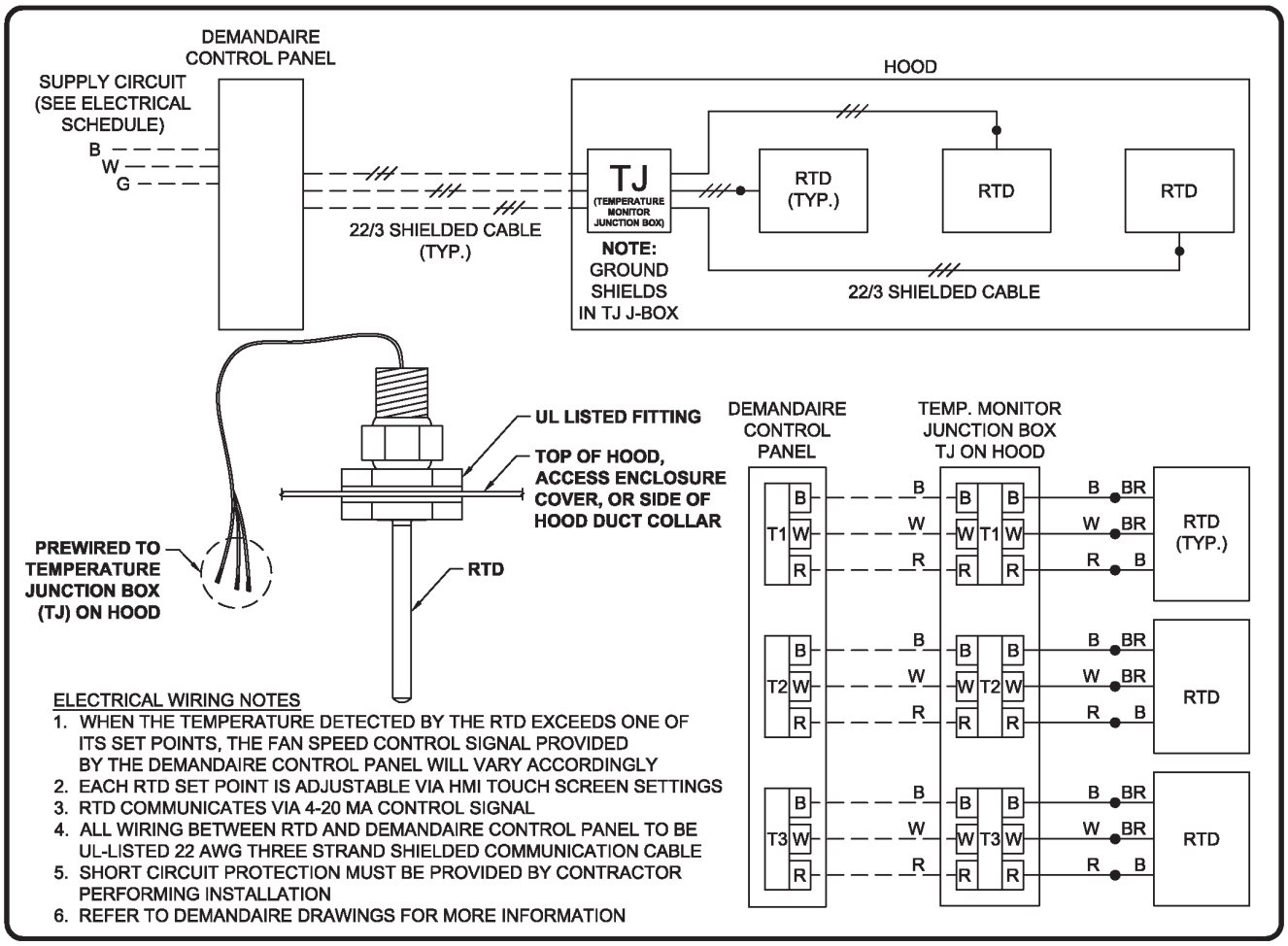


Figure 11A: Hood Canopy and/or Duct Collar Resistance Temperature Detector (RTD) Wiring

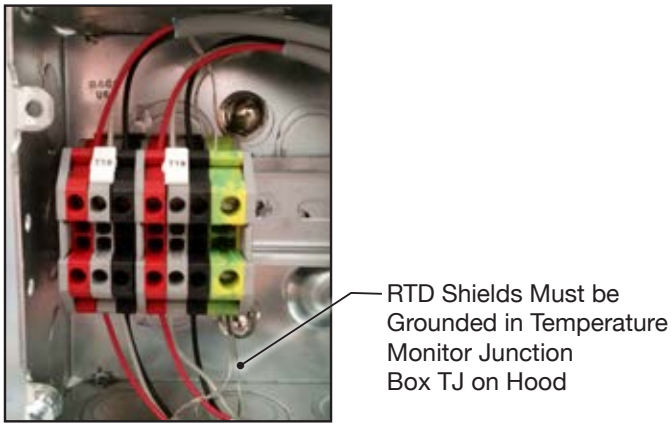


Figure 11B: Hood Canopy and/or Duct Collar RTD Wiring Connections in Temperature Monitor Junction Box

Installation Procedures

Human Machine Interface (HMI) Touch Screen Wiring (Cabinet Mounted)

a. HMIs that are Control Panel or Cabinet Mounted are pre-wired by the factory. No Field connections are required.
b. Refer to the DCP drawings to verify HMI installation location.

Human Machine Interface (HMI) Touch Screen Wiring (Remote)

a. Verify that all power to the control panel is locked out and tagged out.
b. Connect 24 VDC power from terminal block *120* (hot) in the control panel to terminal block *122* in the HMI enclosure and from terminal block *121* (nuetral) in the control panel to terminal block *123* in the HMI enclosure (*Figure 12*).
c. The wires should be torqued to 0.6-0.8 N•m at the terminal blocks.
d. Connect a CAT5 or greater Ethernet communication cable between Port X3 on the Network Switch in the control panel and the corresponding RJ-45 port at the bottom of the HMI (*Figure 12*).

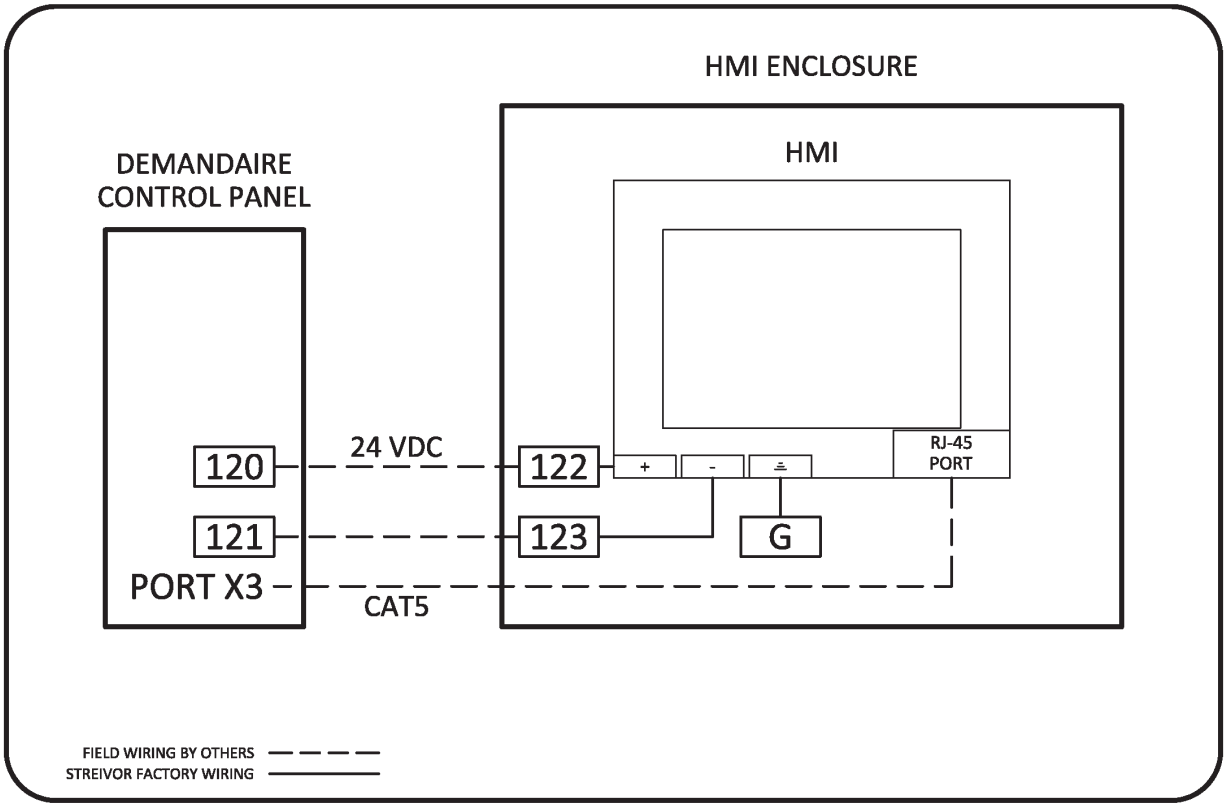


FIGURE 12: Human Machine Interface (HMI)

Installation Procedures

Optional: Shunt Trip Breaker Wiring

Per NFPA 96 Section 10.4.1: Upon activation of any fire-extinguishing system for a cooking operation, all sources of fuel and electrical power that produce heat to all equipment requiring protection by that system and all electrical outlets located under the exhaust hood shall automatically shut off.

a. Verify that all power to the control panel is locked out and tagged out.
b. Terminal block *71* can be used to provide power to a shunt trip device to comply with NFPA 96 Section 10.4.1. Terminal block *71* provides 120 VAC power upon fire suppression system activation (*Figure 13*).
c. The wires should be torqued to 1.5-1.8 N•m at the terminal blocks.

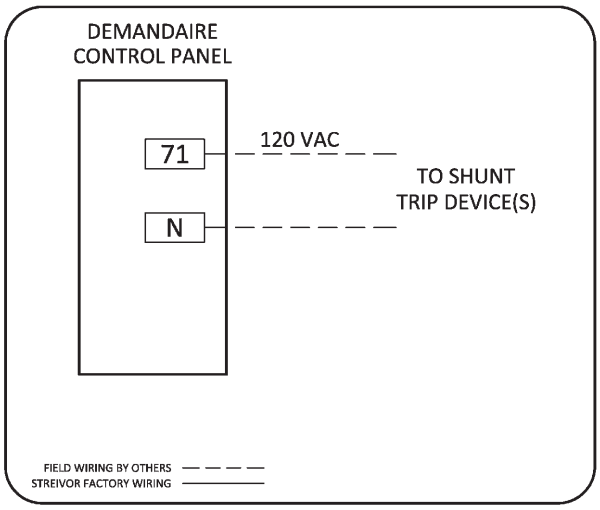


FIGURE 13: Optional Shunt Trip Wiring

Optional: Modbus TCP Communication Wiring

a. Verify that all power to the control panel is locked out and tagged out.
b. A CAT5 or greater Ethernet communication cable may be connected to *Port X2* on the Network Switch in the control panel for Modbus TCP communication with Building Management System(s) *(Figure 14)*.
c. Contact Streivor for Modbus communication points list and associated communications setup parameters.

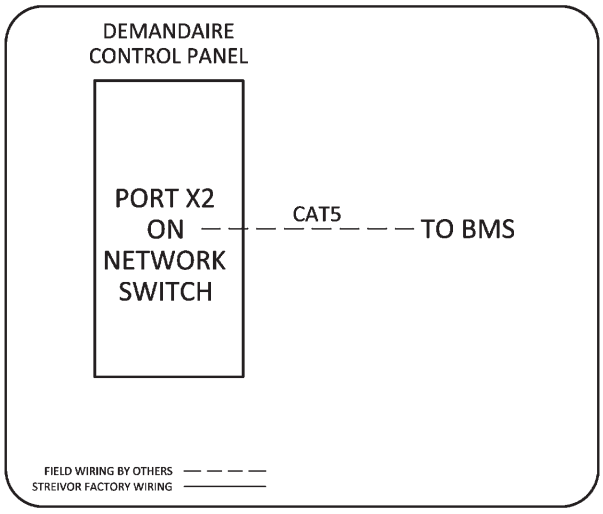


FIGURE 14: Optional Modbus TCP Communication Wiring

Installation Procedures

Electric Gas Valve Input Power Wiring

a. Verify that all supply power to the control panel is locked out and tagged out.
b. Verify that the circuit breaker amperage is sized correctly for the electric gas valve power circuit per the DCP drawings.
c. Connect 120 VAC single phase power to the terminal blocks in the control panel labeled *H1*, *N1*, and *Ground* (*Figure 15*). Note: The electric gas valve circuit input power is separate from the control circuit input power.
d. The wires should be torqued to 1.5-1.8 N•m at the terminal blocks.
e. Repeat for additional electric gas shutoff valve circuits if applicable. Refer to DCP drawings for more information.

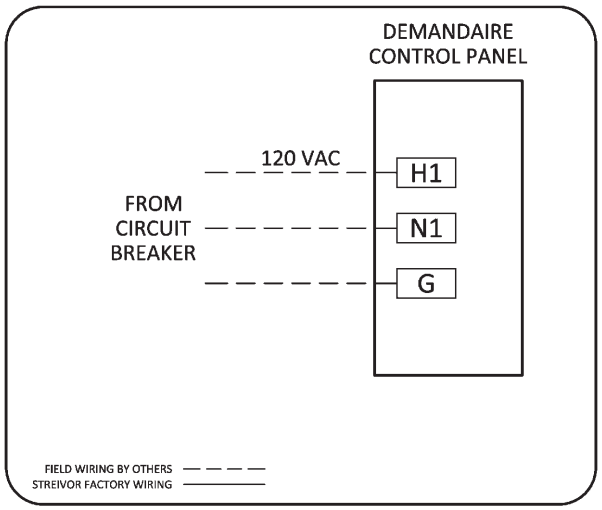


FIGURE 15: Electric Gas Valve Circuit Input Power Wiring

Electric Gas Valve Output Power Wiring

a. Verify that all supply power to the control panel is locked out and tagged out.
b. Connect 120 VAC single phase power from terminal block *130*, *131*, and *ground* in the control panel to the corresponding pre-wired leads on the electric gas valve solenoid(s) (*Figure 16*).
c. The wires should be torqued to 1.5-1.8 N•m at the terminal blocks.
d. Repeat for additional electric gas shutoff valve circuits if applicable. Refer to DCP drawings for more information.
e. Note: A manual keylock bypass switch is pre-wired in the DCP to provide power to the electric gas valve circuit during commissioning and troubleshooting if necessary.

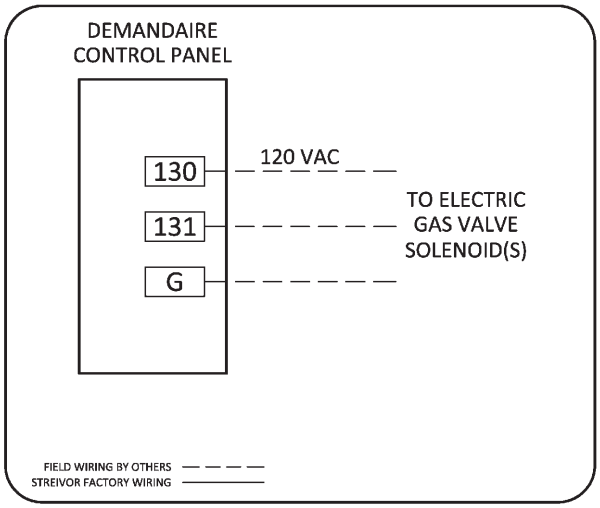


FIGURE 16: Electric Gas Valve Circuit Output Power Wiring

Installation Procedures

Motorized Balancing Damper Control Wiring

a. Verify that all supply power to the control panel is locked out and tagged out.
b. Connect 24 VAC control power from terminal block *200* (VAC+) and *201* (VAC-) in the control panel to the corresponding terminal blocks labeled in the junction box on each hood (*Figure 17*).
c. Connect the 2-10 VDC control signal from terminal blocks *M1*, *M2*, *M3*, etc.in the control panel to the corresponding terminal blocks labeled in the junction box on each hood (*Figure 17*).
d. The wires should be torqued to 0.6-0.8 Nm at the terminal blocks.

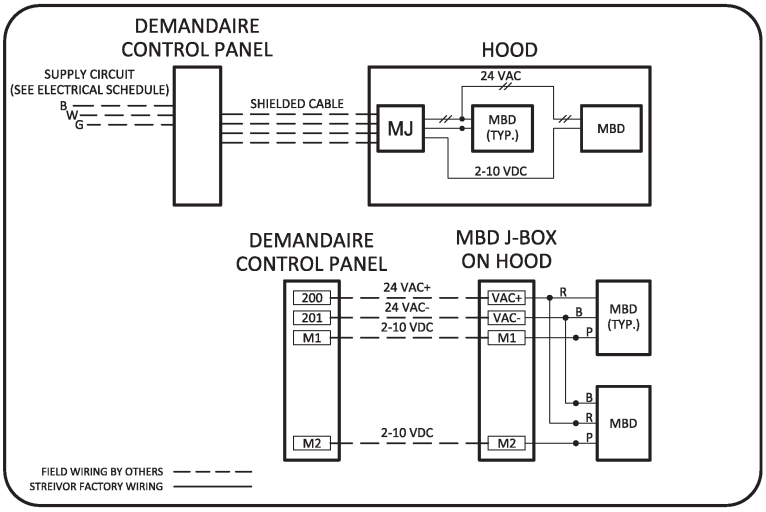


FIGURE 17: **Motorized Balancing Damper Control Wiring**

Operation Procedures

Start Up

1. Apply power to the DemandAire Control Panel CONTROL circuit via the appropriate circuit breaker protecting the DCP.
   a. Verify that 120 VAC is applied between terminal blocks *H* and *N*.
2. If the fire suppression system includes electric gas valve(s), apply power to the GAS VALVE circuit via the appropriate circuit breaker protecting the electric gas valves.
   a. To open the electric gas valve(s) via the HMI touch screen, refer to the *Electric Gas Valve Reset Relay* section.
3. If the control panel includes VFD(s), apply power to the MOTOR circuits via the appropriate circuit breakers protecting the fan motors..
   a. Verify that the specified fan motor power is applied to incoming power terminal blocks of each corresponding VFD(s).
   b. Refer to the DCP drawings for voltage, phase, and a designated terminal blocks for each fan motor.

Human Machine Interface (HMI) Touch Screen Control

The HMI touch screen should be installed in a location where it is readily accessible as it contains all of the switches required to operate the DemandAire system. The HMI also serves as an interface where programming changes are made to system settings. System status such as fan operation history and current temperatures in each hood can be viewed on the HMI as well.

Home Screen

The Home Screen is the default screen for the HMI which provides the switches required for normal operation of the DemandAire system.

Home Screen

1. Light Switch

Provides power to the light(s) manually.

2. Fan Switch

Opens all Motorized Balance Dampers and provides power to the fan motor(s) manually at the minimum speed.

3. 100% Override Button

a. Opens all Motorized Balance Dampers and provides power to the fan motor(s) at 100% capacity manually for a timed duration.
b. When the 100% Override is activated, a timer will appear that displays the remaining duration of time (in seconds) that the fan motor(s) power will remain at 100%.

Operation Procedures

Home Screen

4. Total Energy Cost Savings

Displays the estimated dollars saved as a result appliance monitoring and fan speed reductions.

5. Clock

Displays the current time.

6. Ambient Temperature

Displays the temperature of the kitchen space sensed by the Ambient Temperature Monitor.

7. Alert Indicator

Appears when one or more alarms have occurred and remains visible until all alarms have been resolved.

8. Alarm Log Status Button

Can be pressed to access the Alarm Log Screen (refer to the *Alarm Log Screen* section). This button will remain visible until all alarms have been resolved.

9. Next or Previous Buttons

Allows cycling through each HMI screen.

10. Fan Power Indicator

Displays a bar graph representing the current percentage of maximum motor power provided to each fan.

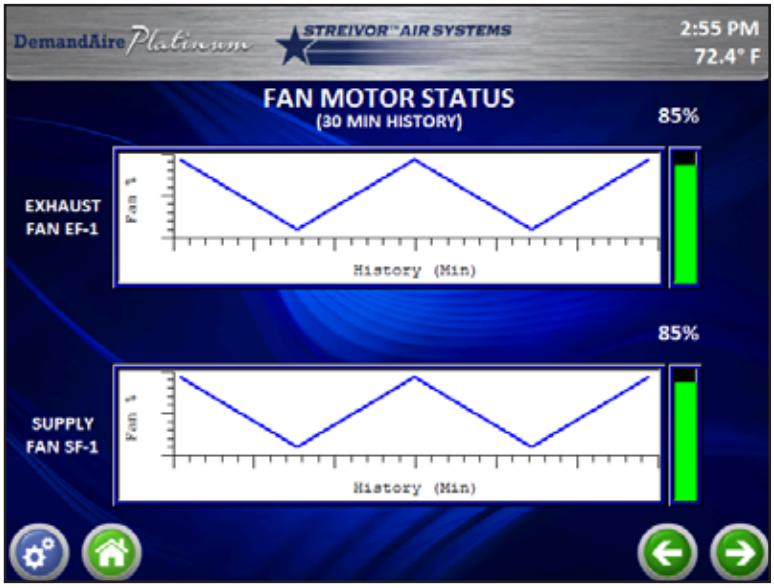
11. Secure Settings Button

Allows access to password protected system settings. Contact Streivor for help accessing secure settings.

Operation Procedures

Fan Motor Status Screens

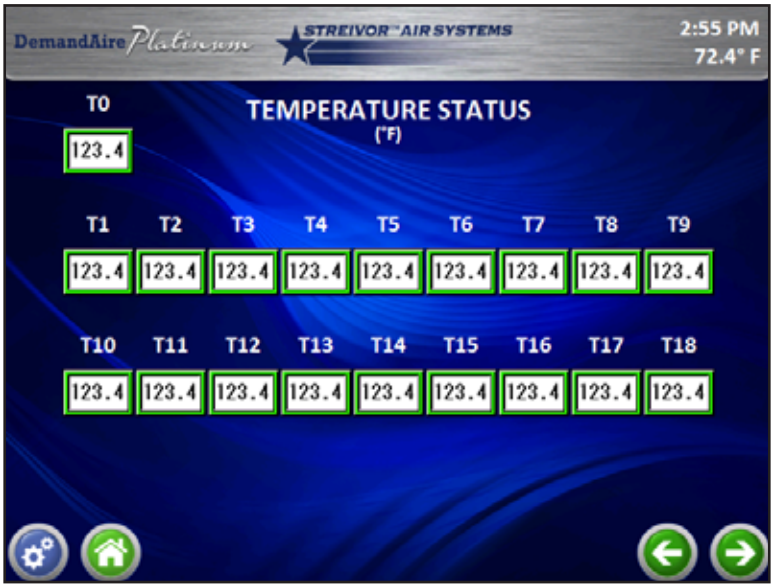
Displays the percentage of maximum motor power provided to each fan. 30-minute and 24-hour history graphs are available.



Fan Motor Status Screen

Temperature Status Screen

Displays the current temperature (°F) readings of the ambient and hood temperature monitors.

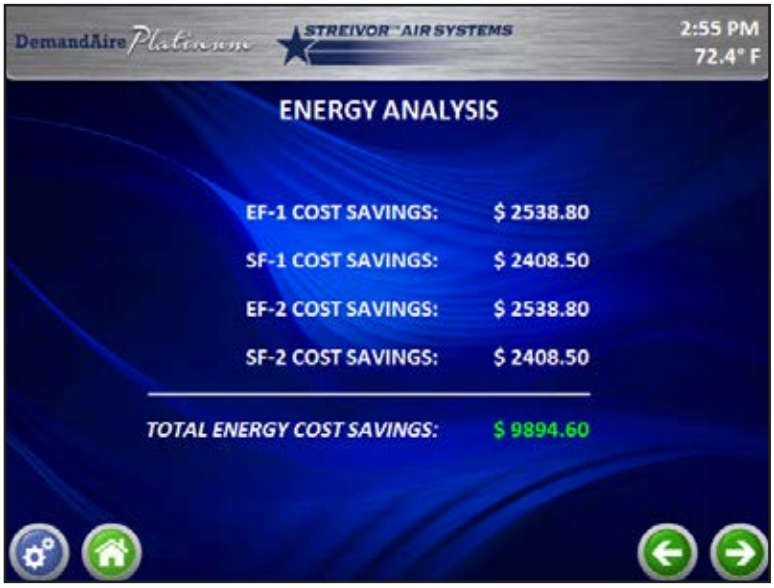


Temperature Status Screen

Operation Procedures

Energy Analysis Screen

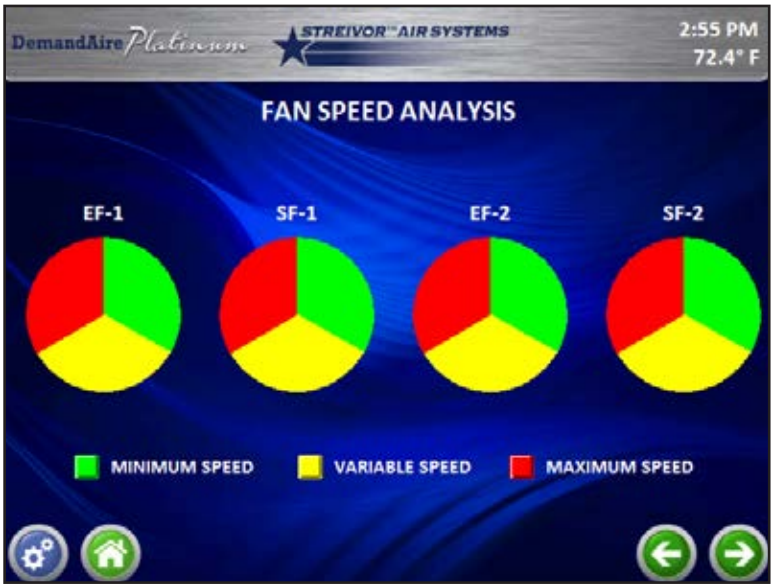
Displays an analysis of the energy cost savings for each fan controlled by the DemandAire system.



Energy Analysis Screen

Fan Speed Analysis Screen

Displays an analysis of how often the fans are operating at minimum speed, variable speed, or maximum speed. This information may be used as a diagnostic tool to perform further system setting(s) adjustments based on the system's history.

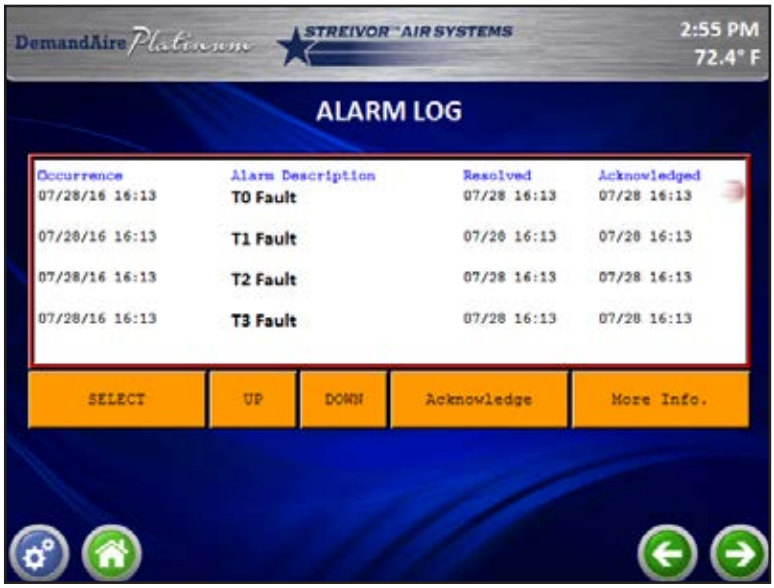


Fan Speed Analysis Screen

Operation Procedures

Alarm Log Screen

Displays a log for each alarm's occurrence, description, resolution and acknowledgement. Refer to the *Alarms* section for more information.



Alarm Log Screen

System Information Screen

Displays the project name, model number, serial number, software version number, and production date of the DemandAire system.

System Information Screen

Operation Procedures

Service and Maintenance Screen

Displays Streivor's company phone number, email address, and website information.

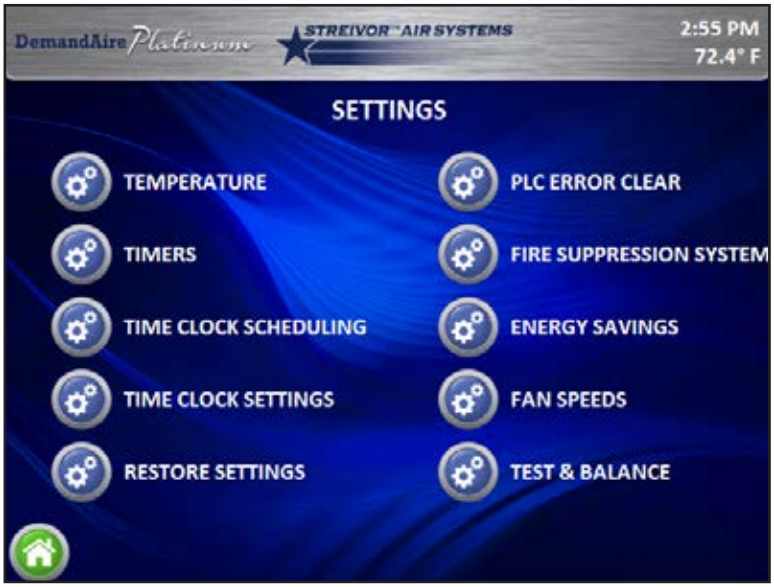
Service & Maintenance Screen

Secure Settings (Password Protected)

The DemandAire system provides password protection of secure systems settings, such as settings for the temperature monitors, timers, etc. Only password holders have access to the secure system settings. Streivor technicians will adjust and save the secure settings during commissioning, however, secure settings may have to be adjusted or changed due to changes to or around of the CKV System and/or the cooking appliances after the initial commissioning. Consult Streivor for information on accessing or adjusting secure settings.

Secure Settings Screen

Displays access to all secure system settings. Press the settings button next to the settings description, select the user, and input the password to view and/or adjust the secure settings.

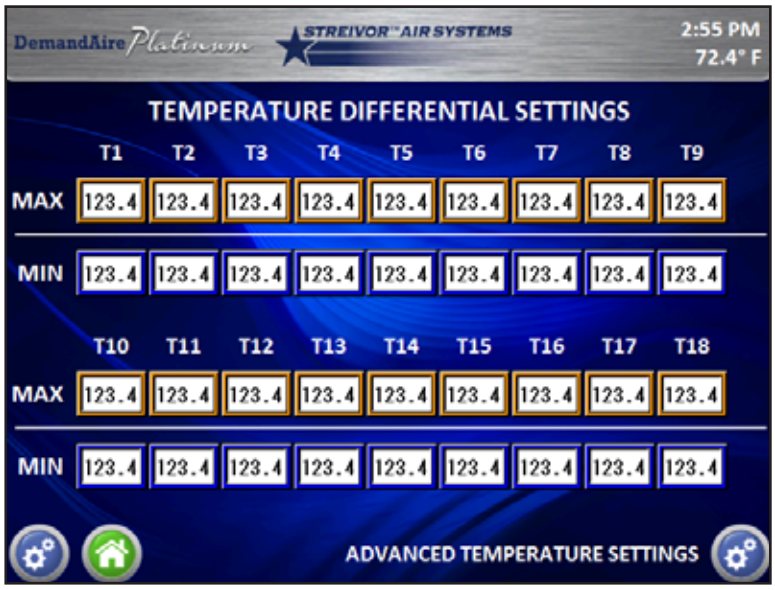


Settings Screen

Operation Procedures

Temperature Differential Settings (Management)

Displays the temperature monitor differential settings. Each temperature monitor has an adjustable minimum and maximum differential set point. Refer to the DCP drawings to determine the location of each temperature monitor. The temperature differential set points have been preset by the factory and adjusted during the commissioning process. Customized adjustments can be made to enhance system performance based on the cooking operation trends developed after the kitchen has opened for operation. Contact Streivor for temperature differential set point guidelines related to specific cooking appliances. ***WARNING: Consult Streivor prior to modifying temperature differential set points. Setting the temperature differentials too high may result in inadequate exhaust airflow which may cause the fire suppression system to be activated.***



Temperature Differential Settings

WARNING

NOTE: HOOD(S) WHICH INCLUDE TEMPERATURE MONITOR(S) MAY AUTOMATICALLY PROVIDE POWER TO THE FAN(S) CONTROLLED BY THE DCP EVEN IF THE FAN SWITCH IS IN THE OFF POSITION.

Operation Procedures

Timer Settings (Management)

Use the Fan Delay timer to set the time duration (in seconds) that will elapse prior to the initialization of the fan power turn down after a decrease in temperature has been sensed by the temperature monitors. Use the 100% Override timer to set the time duration (in seconds) that will fan power will remain at 100% after the 100% Override function has been activated from the Home Screen.

Timer Settings Screen

Restore System Settings (Management)

Use the *Restore Factory Settings* button to restore the settings that were preset by the factory when the control panel shipped. Use the *Restore Commissioning Settings* button to restore settings that were saved during the commissioning and/or air balancing process(es).

Restore System Settings Screen

Operation Procedures

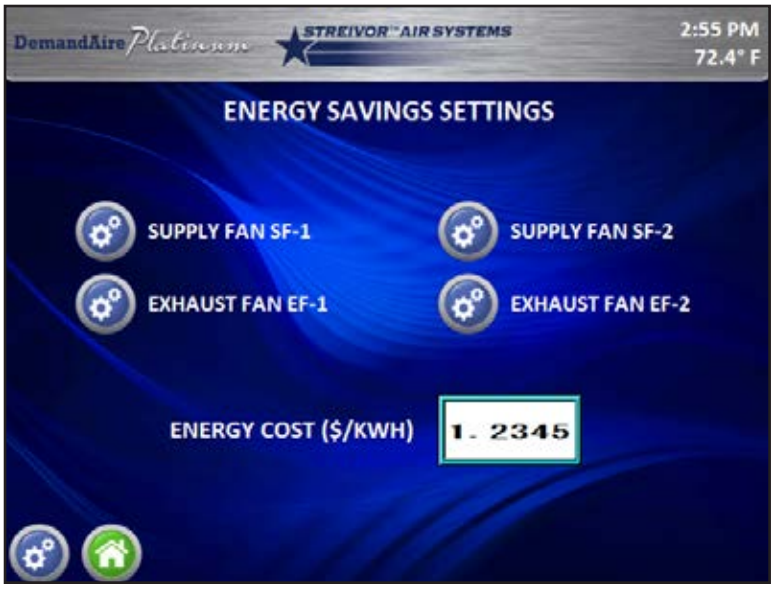
Fire Suppression System Settings (Management)

Use the Fire Suppression System (FSS) settings screen to configure the hoods lights state during a fire suppression system actuation. To shunt power to the lights during a FSS activation (recommended) set the system setting to (0), to not shunt power to the lights during a FSS activation set the system setting to (1).

Fire Suppression System Settings Screen

Energy Savings Settings (Management)

Use the Energy Savings screen to input the ($/KWH) that your facility pays for electricity. This information can be found on your utility bill, or by contacting your utility provider.



Energy Savings Settings Screen

Operation Procedures

PLC Error Clear Settings (Management)

Use the PLC Error Clear screen to clear errors originating from the PLC. Note: do not clear an error before documenting the error and/or contacting Streivor with the alarm information. Refer to the *Alarms* section for more information.

PLC Error Clear Settings Screen

Time Clock and Calendar Settings (Management)

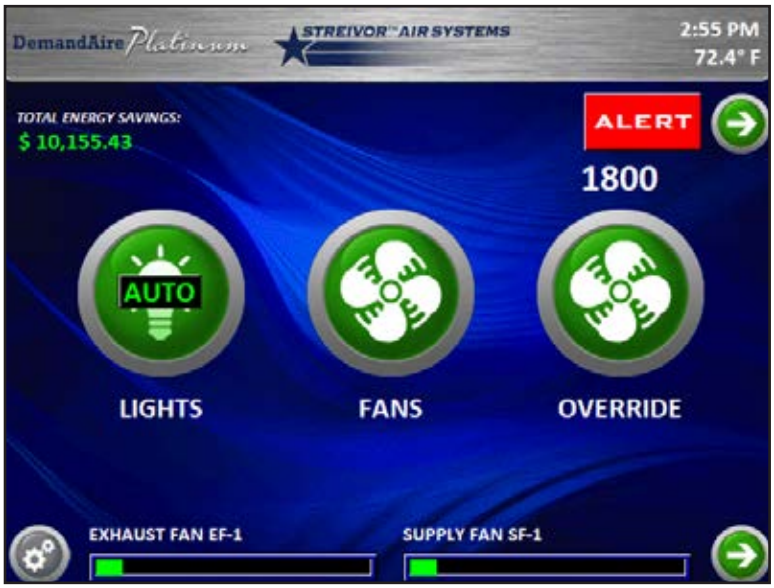
Use the Time Clock and Calendar Settings screen to set the calendar settings. Enter the last two digits of the current year, a month value between 1-12, and a day value between 1-31. Press Save to update the calendar settings. Use the Time Clock and Calendar Settings screen to set the time clock that is displayed on the top right corner of the HMI screen. To set the Time Clock, enter an hour value between 0-23, a minute value between 0-59, and a second value between 0-59. Press Save to update the clock settings.

Time Clock and Calendar Settings Screen

Operation Procedures

Programmable Time Clock (Management)

The Programmable Time Clock (PTC) can be programmed to schedule automatic activation and deactivation of system hood lights and/or fans. Hood lights and/or fans that are activated by the PTC will remain activated until the PTC deactivates them. The hood lights and/or fans cannot be controlled manually from the Home Screen when the PTC is activated. When the PTC has automatically activated the hood lights and/or fans, an “AUTO” indicator will appear in front of the switch(es) on the Home Screen.



Home Screen and Automatic Mode Indicator

The hood lights can be programmed to operate automatically using the Time Clock Scheduling (Lights) Screens. Depending on the DemandAire system, two or more light schedules may be available to allow the lights to operate automatically at different times and/or on different days of the week.

To Program Light(s) Schedule 1:

1. Select the days of the week to turn on and off the hood lights automatically.
2. Enter the time of day (HHMM) for each of the selected days when the lights shall to turn on automatically.
3. Select the time of day (HHMM) for each of the selected days when the lights shall turn off automatically.
4. Press the *Save/Enable* button once to save the scheduled settings and to enable the PTC schedule. The *Save/Enable* button will remain green while the schedule is enabled. Pressing the *Save/Enable* button before the schedule has been configured properly may result in a PLC Error (refer to the *Alarms* section for more information).
5. Repeat the steps above to program additional schedules on the following screen(s).

Operation Procedures

Programmable Time Clock (Management) (Continued)

Time Clock Scheduling (Lights) Screen

The hood fan(s) can be scheduled to operate automatically using the Time Clock Scheduling (Fans - Minimum) Screens. Depending on the DemandAire system, two or more Fans-Minimum schedules may be available to allow the fan(s) to operate automatically at different times and/or on different days of the week.

To Program Fan(s) Schedule 1:

1. Select the days of the week to turn on and off the hood fan(s) automatically.
2. Enter the time of day (HHMM) for each of the selected days when the fan(s) shall to turn on automatically.
3. Select the time of day (HHMM) for each of the selected days when the fan(s) shall turn off automatically.
4. Press the *Save/Enable* button once to save the scheduled settings and to enable the PTC schedule. The *Save/Enable* button will remain green while the schedule is enabled. Pressing the Save/Enable button before the schedule has been configured properly may result in a PLC Error (refer to the *Alarms* section for more information).
5. Repeat the steps above to program additional schedules on the following screen(s).

Time Clock Scheduling (Fans-Minimum) Screen

Operation Procedures

Optional: Email Alerts

Email Alerts are an optional upgrade to the DemandAire system which allows automatic email alerts to be sent whenever an alarm condition occurs regarding the hood ventilation system. The Email Alerts function requires a connection between the internet network and the network switch in the DCP.

Data Logging

The Data Logging feature of the DemandAire system allows for important data to be saved with date and time stamps to CSV files which may be opened in common programs such as Microsoft Excel. Data such as ambient and hood temperature readings, fan control signals, and alarms can be logged as often as once every minute to a 32 GB SD Card which is included with the HMI.

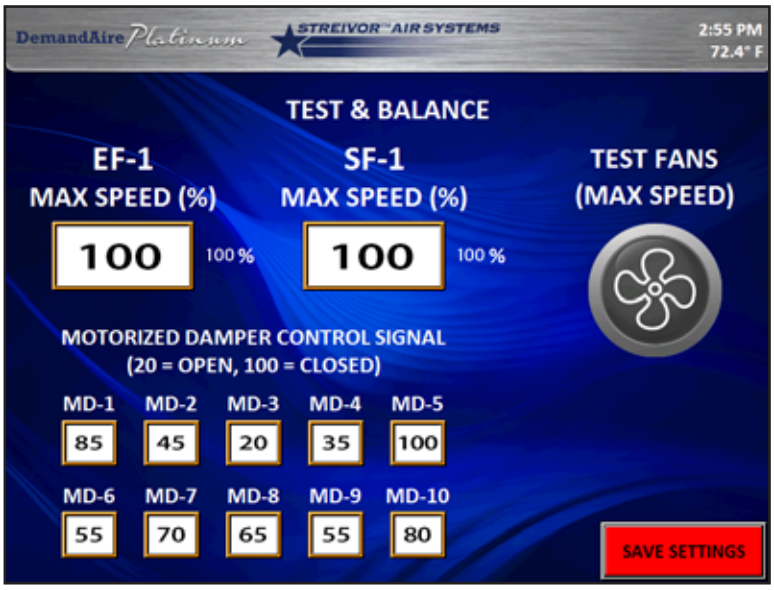
The SD Card in the HMI may be removed to extract data of interest for the purpose of analyzing or troubleshooting the system. To remove the SD card from the HMI, press the SD card inward toward the HMI until it clicks and releases the SD Card. Remove the card, insert it into an SD port on a laptop or desktop computer, and copy any data of interest from the SD Card to the computer. Replace the SD card into the HMI once complete to allow data logging to continue, pressing the card inward toward the HMI until it clicks and holds it in place.

SD Card Included with HMI for Data Logging

Operation Procedures

Test and Balance Screen (Test & Balance)

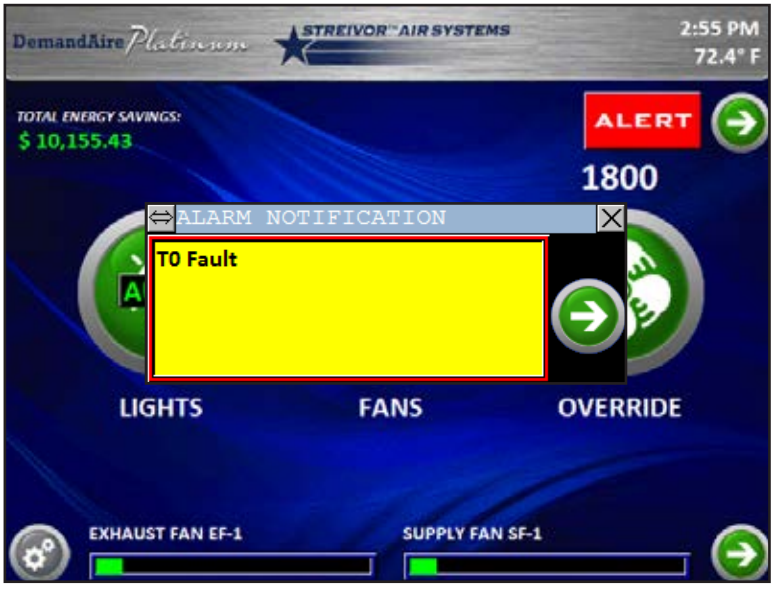
The Test and Balance (T&B) screen may be used to make motor power and Motorized Balancing Damper (MBD) “open” position adjustments. The MBD “open” position represents the damper position required to balance each hood at its specified exhaust rate. The T&B screen displays the current fan speed (as a percentage of maximum motor power), the maximum fan speed input adjustment, the MBD “open” position control signal input adjustment, and *Test Fans* button and *Save Settings* button. To adjust the fan power during the T&B process, the maximum fan speeds may be modified and the fans can be activated manually using the *Test Fans* button to operate the fans at the newly adjusted maximum speeds. Changes to the MBD control signal will start to modify the damper position immediately until reaching the selected holding position. Press the *Save Settings* button to save adjustments made to the maximum fan speeds and MBD “open” positions.



Test and Balance Screen

Alarms

The DemandAire Gold control system provides audible and/or visual indicators on the HMI touch screen in the event of an alarm condition. Alarms include Temperature Monitor Alarms, High Temperature Alarms, PLC Error Alarm, VFD Alarm, and Fire Suppression System Alarm. In the event of an alarm condition, the *Alarm Notification* window will display listing the current alarm(s). Press the green button on the *Alarm Notification* window to view the *Alarm Log Screen*.

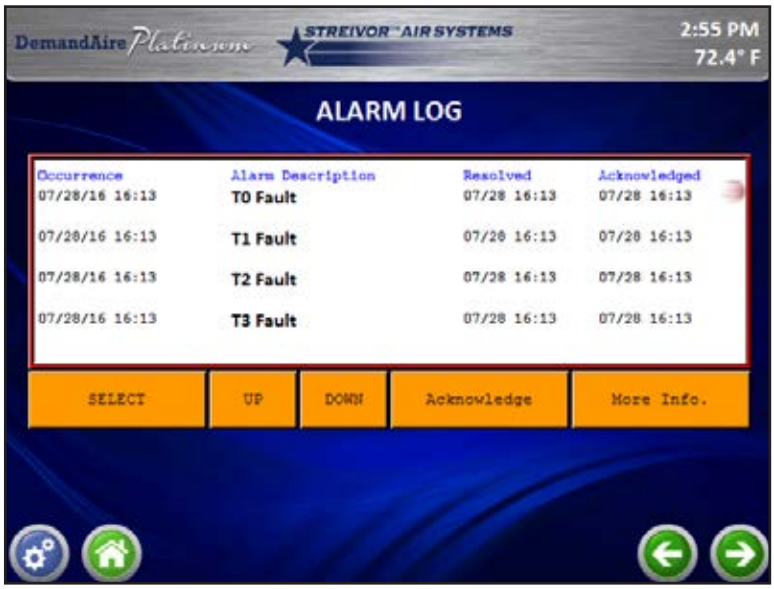


Alarm Notification Window on Home Screen

Operation Procedures

Alarm Log Screen Details

In the event of an alarm condition, each alarm can be selected using the *Select* button on the Alarm Log Screen. The *Up* and *Down* buttons may be used to cycle between multiple alarms which have occurred. In the event of an alarm, select the unresolved alarm and press the *Acknowledge* button to confirm that the alarm has been acknowledged. Press the *More Info*. button to provide more detail on the specific alarm and further instructions regarding how to resolve the alarm.



Alarm Log Screen Detail

Temperature Monitor Alarm

In the event of a temperature monitor alarm, the *Alarm Notification* window will display the monitor which is causing the alarm. From the *Alarm Log Screen*, press the *More Info.* button to review additional information regarding the alarm.

Temperature Monitor Alarm Screen

Operation Procedures

High Temperature Alarm

In the event of a high temperature alarm, the *Alarm Notification* window will display the monitor which is sensing a high temperature in the hood. From the *Alarm Log Screen*, press the *More Info.* button to review the information below. The *Temperature Status* button can be pressed to view the current temperatures below the hood(s).

High Temperature Alarm Screen

PLC Error Alarm

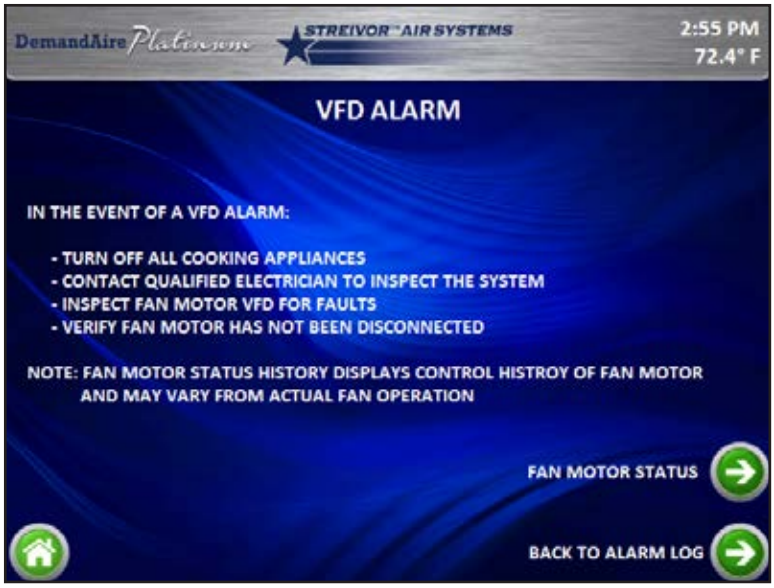
The *Alarm Notification* window will appear in the event of a PLC error alarm. The PLC error alarm(s) may occur for a variety of reasons such as incorrect PTC settings configuration, hardware failure, or power loss to the DemandAire control panel. Follow the steps to record and clear the PLC errors in the event of a PLC error alarm.

PLC Error Alarm Screen

Operation Procedures

Variable Frequency Drive (VFD) Alarm

If VFDs for the fan(s) were provided by Streivor in the DCP, a VFD alarm will occur upon sensing a fault from the VFD. The *Alarm Notification* window will appear displaying the VFD alarm. From the *Alarm Log Screen*, press the *More Info.* button to review additional information regarding the alarm.



VFD Alarm Screen

Fire Suppression System Alarm

In the event of a Fire Suppression System alarm, the *Alarm Notification* window will appear displaying the alarm. From the *Alarm Log Screen*, press the *More Info.* button to review the information regarding the alarm before proceeding to resetting the electric gas valve(s).

Fire Suppression System Alarm Screen

Operation Procedures

Electric Gas Valve Reset Relay

In the event of a fire suppression system actuation, the DemandAire system will shunt power being provided to the electric gas shutoff valve(s). The valve(s) will close to discontinue the supply of gas to cooking appliances and will remain in the closed position until manually reset via the HMI touch screen. Contact a certified plumbing technician to inspect the gas system following a fire suppression system actuation. Upon approval by a certified plumbing technician, press the *Reset* button to manually reset the electric gas shutoff valve(s) and return to the Home Screen to resume normal operation.
Note: The electric gas valve(s) cannot be reset if the fire suppression system has not yet been rearmed.

Electric Gas Valve Reset Relay Screen

Warranty

Streivor, Inc., (Seller), warrants this equipment to be free from defects in materials and workmanship, under normal use and service, for the period of 18 months from the date of shipment.

This warranty shall not apply if:

1. The equipment is not installed by a qualified installer per the Seller's installation instructions (copy of which is shipped with the product).
2. The equipment is not installed in accordance with federal, state and local codes and regulations by a qualified installer.
3. The equipment is misused or neglected.
4. The equipment is not operated within its published capacity.
5. The equipment is modified internally.

The Seller shall not be liable for incident and consequential losses and damages potentially attributed t malfunctioning equipment.

Should any part of the equipment prove to be defective in material or workmanship within the 12 months warranty period, upon examination by the Seller, such part will be repaired or replaced by Seller at no charge. The Buyer shall pay all labor costs incurred in connection with such repair or replacement.

Equipment shall not be returned without Seller's prior authorization and all returned equipment shall be shipped by the Buyer, F.O.B. Seller's factory, freight prepaid.

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