

E. ELECTRICAL

E.3.1.3. Routing Wires through Curb (Option)

Use liquid tight connectors and tubing to connect the electrical and low voltage control cables between the base of the cabinet at the raised section (See **Figure B.3.6. - A: Supply And Return Dimensions For Downflow Applications** for location of raised section) and bottom of the control panel. Conduit and fittings must meet all applicable codes.

Use Silicon and gaskets to seal the connection at the base pan.

E.3.1.4. Connecting to Contactor Terminal Blocks

The recommended torque for securing wiring to the contactor is **40 in-lb**.

See **Figure E.3. - A: Typical Thermostat Wiring** for wiring to the contactor.

E.3.2. Factory Installed Disconnect

Refer to **Appendix H** for the unit wiring diagrams, and to **Figure F.3. - A** for locations to route wires into the cabinet or through the curb/basepan of the unit.

E.3.2.1. Routing Wires into Cabinet

Refer to section **E.3.1.1.** and/or section **F.3.** for routing wires into the cabinet with a factory installed disconnect.

E.3.2.2. Routing Wires through Curb (Option)

Refer to section **E.3.1.3.** for routing wires through the curb with a factory installed disconnect.

E.3.3. Connecting the Convenience Outlet

E.3.3.1. Non-powered

The non-powered convenience outlet, if purchased as an option for the unit, will come shipped in a box within the blower compartment of the unit. It will need to be removed and installed into its proper configuration.

For connecting the non-powered convenience outlet and all other information, refer to the installation instructions for the accessory.

E.3.4. Checking Phase and Motor Rotation

When using 3 phase power the only device that is rotation dependent is the compressor. The outdoor fan and indoor blower do not require any adjustment and will turn backwards if the phase is incorrect. Verify the direction of rotation for the indoor blower motor before starting up the compressors.

E.3.4.1. Checking Phase with VFD Drive

On any belt-drive units with a Variable Frequency Drive (VFD), the motor will always rotate in the correct direction. Correct phase must be checked by the operation of the compressor.

E.3.5. Grounding Requirements

Refer to local codes as required. Must be grounded to a common earth ground.

National Electric Code (NEC) / International Building Code / Canadian Electrical Code

A diagram of the internal wiring of this unit is located on the inside of control access panel and in this manual. If any of original wire as supplied with the appliance must be replaced, the wire gauge and insulation must be same as original wiring.

The low voltage wiring should be sized as shown in **Figure F. - A: Field Wire Size for 24v Thermostat Circuits**.

F. CONTROL / THERMOSTAT WIRING

F.1. T-Stat field connections

Figure F. - A

FIELD WIRE SIZE FOR 24 VOLT THERMOSTAT CIRCUITS						
THERMOSTAT LOAD - AMPS	SOLID COPPER WIRE - AWG.					
	16	14	12	10	10	10
	16	14	12	12	12	10
	16	16	14	12	12	10
THERMOSTAT LOAD - AMPS	LENGTH OF RUN - FEET (1)					
	50	100	150	200	250	300

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(1) THE TOTAL WIRE LENGTH IS THE DISTANCE FROM THE FURNACE TO THE THERMOSTAT AND BACK TO THE FURNACE.

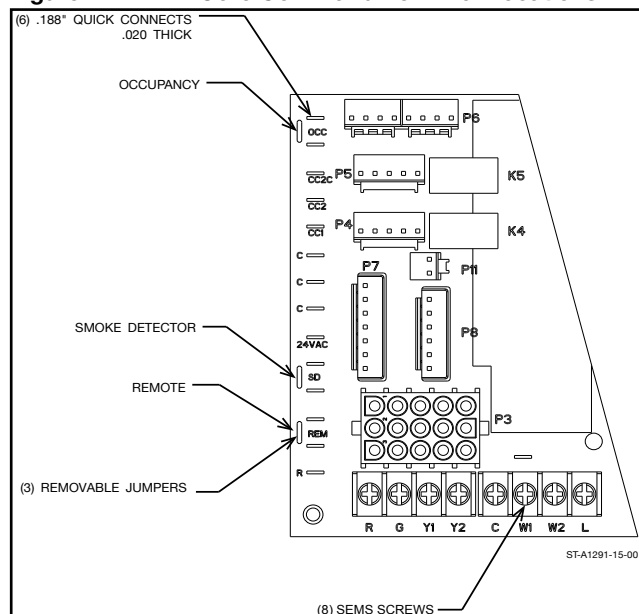
NOTE: DO NOT USE CONTROL WIRING SMALLER THAN NO. 18 AWG.

Install the room thermostat in accordance with the instruction sheet packed in the box with the thermostat. Run the thermostat lead wires through the control entry opening (**Figure F.2. - A: Electrical and Piping Routing**) and connect to the low voltage thermostat connections (see **Appendix H** for wiring diagrams and **Section F.1.** for T-Stat field connections). Never install the thermostat on an outside wall or where it will be influenced by drafts, concealed hot or cold water pipes or ducts, lighting fixtures, radiation from fireplace, sun rays, lamps, televisions, radios or air streams from registers. Refer to instructions packed with the thermostat for "heater" selection or adjustment.

F.1.1. Misc. Connections

Refer to **Appendix H** for the unit wiring diagrams and to **Figure E.3. - A: Typical Thermostat Wiring**.

Figure F.1.1. - A: Core Command Terminal Locations



F.1.2. Occupancy connections / Remote connections / Etc

Figure F.1.2. - A: Occupancy and Remote Connections

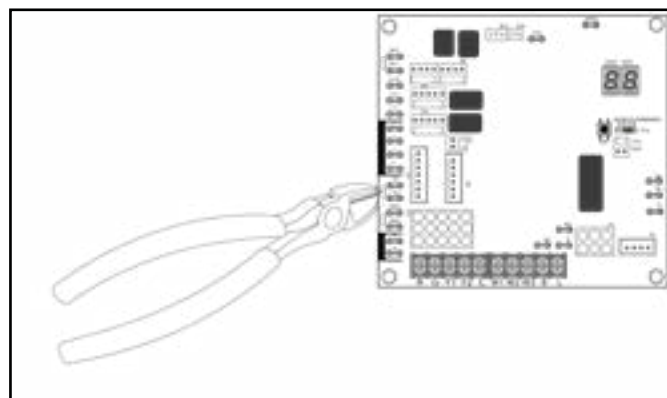


Figure F.1.2. - B: Non-DDC Board

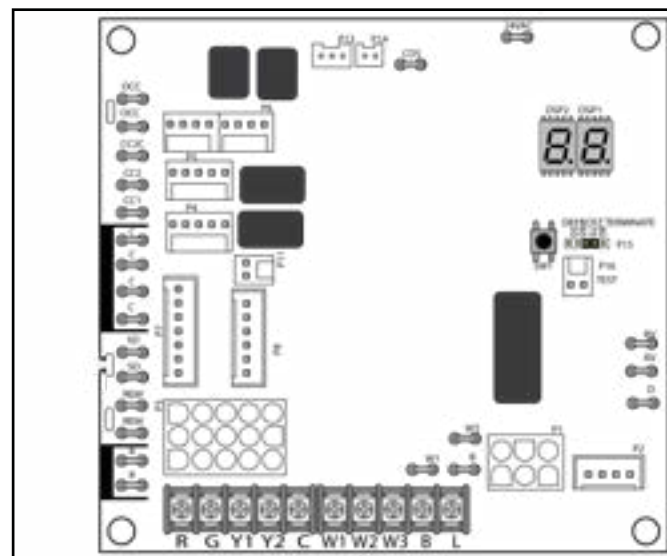
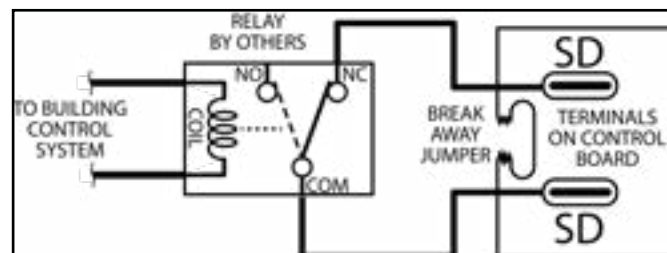


Figure F.1.2. - C: Using a Dry-Contact Relay



NOTE: This is an example of breaking the jumper for Smoke Detector connections, apply the same process for the Occupancy and/or Remote connections.

These features are only available on the Non-DDC Furnace, Heat pump, or cooling only control boards.

F. CONTROL / THERMOSTAT WIRING

OCC – Occupancy Control. This feature shuts down the dampers on the economizer or motorized damper option when outdoor/fresh air is not required for the building. Locate the terminals at the left side of the board mark “OCC”. See **Figure F.1.2. – A: Occupancy and Remote Connections** for reference.

For connecting Remote Smoke Detectors or Fire Control Panels to this control DO NOT break the 24VAC to the thermostat or from the power supply transformer. Either could cause an undesirable operating condition that would not shut the unit down in the event of an emergency situation. See the instructions for the type of control board this unit is equipped with.

Using cutters or a small screw driver, break the edge of the board between the terminals marked with “OCC”. Use 3/16” blade connector, and a minimum of 18AWG wire to connect to a Normally Closed Dry Contact Relay or Switch. Do not connect multiple control boards to the same dry contact relay or switch.

REM – Remote Shutdown Control. This feature allows the unit to be turned off remotely ignoring the thermostat calls for cooling or heat. Locate the terminals at the left side of the board mark “REM”. See **Figure F.1.2. – A: Occupancy and Remote Connections** for reference.

Using cutters or a small screw driver, break the edge of the board between the terminals marked with “REM”. Use 3/16” blade connector, and a minimum of 18AWG wire to connect to a Normally Closed Dry Contact Relay or Switch. Do not connect multiple control boards to the same dry contact relay or switch.

F.1.3. Connecting a Smoke Detector

F.1.3.1. Core Command Connection

SD – Remote Smoke Detection. This feature allows for the proper shutdown of the controls in the event of an emergency situation. Locate the terminals at the left side of the board mark “SD”. See **Figure F.1.2. – A: Occupancy and Remote Connections** for reference.

Using cutters or a small screw driver, break the edge of the board between the terminals marked with “SD”. Use 3/16” blade connector, and a minimum of 18AWG wire to connect to a Normally Closed Dry Contact Relay, or in common Fire Control Panels and Smoke Detectors, the Auxiliary Connections for C and NC. See the instructions for the remote devices. Do not connect multiple control boards to the same dry contact relay.

F.1.3.2. DDC Control Connection

In the air-filter section or on the side economizer, locate the 12-pin Molex jumper plug with the long Red, short Yellow and Orange wire loops; see **Figure F.2.5.2. – A** for reference. Cut the Red wire loop and connect these to a minimum of 18AWG wire that will be connected to a Normally Closed Dry Contact Relay, or in common Fire Control Panels and Smoke Detectors, the Auxiliary Connections for C and NC. See the instructions for the remote devices. Do not connect multiple control boards to the same dry contact relay.

Figure F.2.1. – A 24VAC Thermostat Circuits

FIELD WIRE SIZE FOR 24 VOLT THERMOSTAT CIRCUITS						
THERMOSTAT LOAD - AMPS	SOLID COPPER WIRE - AWG.					
	16	14	12	10	10	10
	16	14	12	12	12	10
	16	16	14	12	12	10
	50	100	150	200	250	300
LENGTH OF RUN - FEET (1)						

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(1) THE TOTAL WIRE LENGTH IS THE DISTANCE FROM THE FURNACE TO THE THERMOSTAT AND BACK TO THE FURNACE.

NOTE: DO NOT USE CONTROL WIRING SMALLER THAN NO. 18 AWG.

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(1) THE TOTAL WIRE LENGTH IS THE DISTANCE FROM THE FURNACE TO THE THERMOSTAT AND BACK TO THE FURNACE.

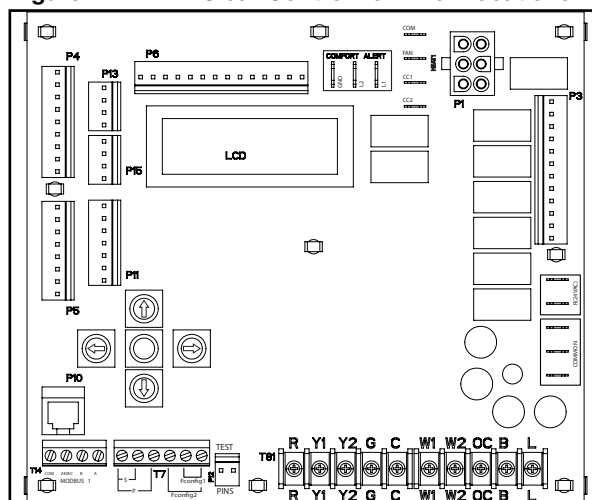
NOTE: DO NOT USE CONTROL WIRING SMALLER THAN NO. 18 AWG.

F.2. DDC Control Inputs

F.2.1. 24VAC Thermostat Control/Operation

Install the room thermostat in accordance with the instruction sheet packed in the box with the thermostat. Run the thermostat lead wires through the control entry opening (**Figure F.3. – A: Electrical and Piping Routing**) and connect to the low voltage thermostat connections (see **Appendix H** for wiring diagrams). Never install the thermostat on an outside wall or where it will be influenced by drafts, concealed hot or cold water pipes or ducts, lighting fixtures, radiation from fireplace, sun rays, lamps, televisions, radios or air streams from registers. Refer to instructions packed with the thermostat for “heater” selection or adjustment.

Figure F.2.1. – B: Clear Control Terminal Locations



F. CONTROL / THERMOSTAT WIRING

F.2.2. DDC Automated Stand-Alone Operation.

F.2.2.1. Setting the Unit Up: Mode Settings

The unit will need to be configured as follows.

1. The Mode must be set to Auto. This will allow the unit to automatically switch between heating and cooling operation based on the return air temperature or space temperature sensor, if installed (See Section **F.2.3. External Sensor Connections**).

The following Automatic Modes can be selected:

AUTO - run both heating and cooling.

Cool Only - run only cooling.

Heat Only - run only heating.

Fan Only - will only run the fan with no heating or cooling.

2. To select the Mode, use the right arrow key to navigate to "MODE," press the middle button and use the up and down arrow keys to select the desired operating mode for the unit, and then press the middle button to confirm. Control by Thermostat (Ctrl by Tstat) is not an automatic operation mode.
3. Next the Occupancy Control must be set up. While in the Mode Menu, use the down arrow key to navigate to the Occupancy Menu option. Press the middle button to change the setting and use the up and down arrows to select the option required by the application. Then, press the middle button to confirm the setting.
 - If the system is going to run in stand-alone mode with no external inputs for Occupancy control (refer to section **F.2.2. DDC Automated Stand-Alone Operation**), set the occupancy to "occupied." In this setting, the system will run in a continuous occupied state and the operation of the fan will be based on the indoor fan mode. Refer to section **F.2.2.2. Indoor Fan Mode**.
 - If "unoccupied" is selected, the unit will run in a continuous state of unoccupied, and only turning on the fan when heating or cooling for the unoccupied setpoint is needed. In this mode, if a zone sensor with an override button is installed (refer to section **F.2.3.2. Zone Sensor Occupancy Override**), then the unit can be triggered to run in an occupied mode based on the tenant override timer. The zone sensor occupancy button will also trigger an occupied state for all occupancy control modes.
 - If "local switch" is selected, then the unit will look for an external 24VAC input on the OC

terminal of the T8 terminal strip. This 24VAC source can be from an external time clock or building occupancy controller. When 24VAC is applied to the OC terminal, the unit will enter an occupied state of operation.

- If "network" is selected, the unit will look for an occupancy command coming from a Building Management System through the Modbus interface of the control board. Optional BACnet or LonTalk translator cards will carry this function as well.

For information on setting up the system for stand-alone operation, including preparing the unit for Building Management Control, refer to section **F.2.2. DDC Automated Stand-Alone Operation** and **F.2.4. Building Management/Control Connections Using DDC**.

F.2.2.2. Indoor Fan Mode

If the unit is running in an occupied state, the system does not have to continuously run the fan. In the Mode Menu, use the down arrow to navigate to "Indoor Fan Mode." There are two selectable options: continuous and auto-mode. Continuous will run the fan continually in the occupied more, while auto-mode will only run the fan when there is a call for heating or cooling.

F.2.2.3. Occupancy Control External Input 24VAC

Occupancy can be triggered externally to the unit via a 24VAC input on the OC terminal of the T8 thermostat terminal strip. To connect, run the wire from the "R" 24VAC terminal and the "OC" terminal to an occupancy controller in the building. The control needs to have a dry contact relay. When the relay is closed, 24VAC will be passed to the OC terminal and trigger the unit into an occupied operating mode. When the relay is open, the 24VAC to the OC terminal will be lost and the unit will run in an unoccupied state.

F.2.2.4. Temperature Setpoints

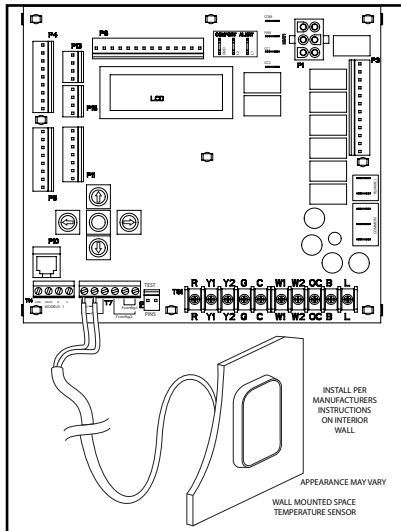
There are two temperature setpoints for occupied and unoccupied modes, heating and cooling. Using the control board's navigation buttons, proceed to the Setpoints Menu and use the down arrow key to select "occupied or unoccupied cool and heat setpoints." Press the middle button to select the first setpoint and use the up and down arrow to adjust the setpoint as required for the application. Then, press the middle button to confirm the setting and advance to the second setpoint. Again, use the up and down arrow keys to adjust the setting, and press the middle button to confirm this setpoint and the settings for the occupancy mode.

There is an automatic temperature differential between heating and cooling. This is adjusted and set in the "Cool Diff" and "Heat Diff" menu items.

F. CONTROL / THERMOSTAT WIRING

F.2.3. External Sensor Connections

Figure F.2.3.1. - A: Space Temperature Sensor



F.2.3.1. Space Temperature Sensor

1. When using a DDC unit with Clear Control in conjunction with a Building Management System or an Automated Operational Mode, the use of a Space Temperature Sensor can greatly improve the accuracy and operation of the unit in maintaining the comfort in the space in both cooling and heating.
2. The space temperature sensor requirements is a 10k type II sensor.
3. Install the sensor on an interior wall in the space served by the packaged unit and connect the wires according to the manufacturer's instructions of the sensor type and style selected.
4. Run these wires from the sensor to the control panel of the unit.
5. After routing the sensor wires through the control panel and to the control board, strip 1/4" of insulations off the ends of the wires.
6. At the control board, locate the T7 green terminal strip. Loosen the two screw terminals marked with "S" (the two left most terminals), insert one of each of the two wires into the terminal opening on the bottom of the strip, and tighten the screw terminal. The connections are not polarity specific, either wire can be connected to either terminal, unless a setpoint adjustment option is used, they will use a shared common, the left most terminal. See the sensor manufacturer's instructions for details.

7. Verify the sensor is reading properly, power up the unit, use the left arrow key to navigate to the Temperatures Menu. Use the down arrow key to go to the space temp option, it should be showing a temperature reading. Use a test instrument to verify the air temperature at the sensor is within 1 to 3 degrees of the reading on the control board. An incorrect type sensor, excessive wire length, or bad connections will cause a significant discrepancy in the readings.
8. For more accurate operation, use the Space Temp Offset menu option to adjust the sensor reading on the Clear Control by +/-3 degrees to match the reading on the test instrument.
9. If the Clear Control is in the control by Thermostat Mode, the Space Temperature sensor will not be used for the operation of the unit.

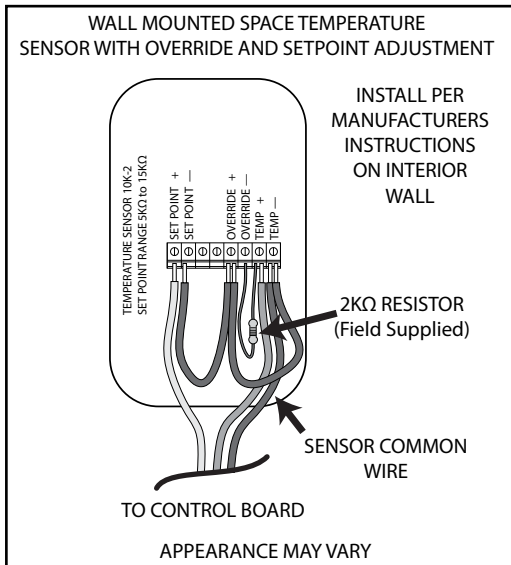
F.2.3.2. Zone Sensor Occupancy Override

If the wall sensor has an override button for triggering occupancy, the override button needs to be set up as follows. The override trigger is looking for a 1.2 to 1.6 Ohm resistance across the space temperature sensor input.

1. Depending on the design of the sensor, some provide separate connections for the override output. If this is the case, use a short piece of wire to connect one side of the override output to one side of the temperature sensor output, and then use a 2k Ohm resistor (field-supplied) as the jumper from the other leg of the override output and the other temperature output wire.
2. Prerequisites: Occupancy Control must be set to Unoccupied, Network when controlled through a BMS or Local Switch and there is a 24VAC Input on the OCC terminal, such as using a time based controller. Units set to "Occupied" in the Occupancy Menu, the override button will have no effect, since the button triggers occupancy.
3. To adjust how long the override lasts, navigate to the Time Delays Menu and use the down arrow to select the Tenant Override Timer (Ten Ovr. Time), press the middle button to adjust the time between the required range of 2 to 6 hours.

F. CONTROL / THERMOSTAT WIRING

Figure F.2.3.2. - A: Common Sensor Back Plane - Setpoint and 2k Override.



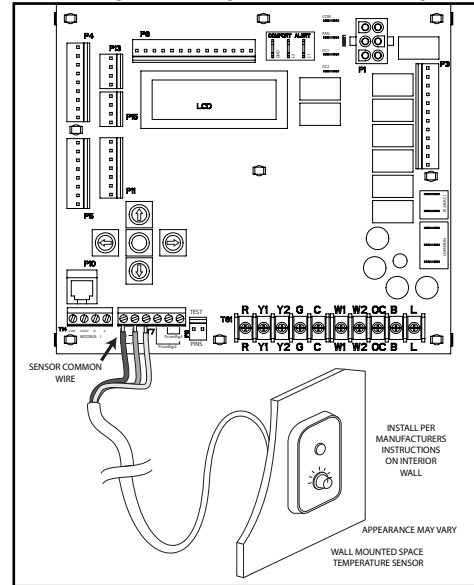
F.2.3.3. Set-Point Adjustment

In an Automatic Operation Mode or controlled by a BMS, a zone sensor with a setpoint adjustment is can be used to vary or adjust the setpoint temperature for the space that the unit is serving. This does require some specific setup to configure the operation and limitations for the adjustment range.

The zone sensor must have a setpoint adjustment range of 5k or 15k Ohms of resistance to provide the 55°F to 90°F set point adjustment range. Zone control devices with other resistance ranges are not compatible and will not function properly with the Clear Control and can cause operational errors or shutdown.

At the control board, locate the T7 green terminal strip. Loosen the two screw terminals marked with "P" (the left most and third from the left terminals), insert one of each of the two wires into the terminal opening on the bottom of the strip and tighten the screw terminal. The connections are polarity specific, and commonly connected with a temperature sensor. The setpoint adjustment and temperature sensor will use a shared common, the left most terminal. Refer to the sensor manufacturer's instructions for details for connections at the sensor.

Figure F.2.3.3. - A: Space Temperature with Setpoint



Once the sensor is connected and installed, power up the unit. The following menu items need to be setup and adjusted according to the requirements for the application.

Prerequisites, the unit must be set up in Automatic Mode or configured to operate with a Building Management System. The setpoint adjustment will not function if the unit is set to "Control by Thermostat."

1. Power on the unit and proceed to the Setpoints Menu. Use the down arrow key to navigate to the Setpoint Adjust Enable (Stpnt Adj Enable) menu item, press the middle button, and use the up or down arrow key to select "Enable," press the middle button again to confirm.
2. At the remote sensor, adjust the setting to the middle position and notate the temperature value. Commonly, it is 76°F, but this reading may vary by manufacturer. See their instructions on determining the middle temperature value.
3. At the Clear Control, navigate to the Setpoint Adjust menu item, press the middle button, and use the up and down arrows to select the temperature that the remote sensor is set to. Then, press the middle button to confirm the setting. This set is important to ensure that adjustment and control setpoint temperature align, especially with remote sensors that have a display or marked temperature value.

F. CONTROL / THERMOSTAT WIRING

4. Navigate to the Set Cool Limit menu item. This setting allows the installer to limit the lowest cooling setpoint allowed. Press the middle button and use the up and down arrows to adjust as required by the application, press the middle button to confirm the setting. The range is 55°F to 89°F.
5. Navigate to the Set Heat Limit menu item, this setting allows the installer to limit the highest heating setpoint allowed. Press the middle button and use the up and down arrows to adjust as required by the application. Then, press the middle button to confirm the setting. The range is 56°F to 90°F.

F.2.3.4. Humidity Sensor

Field Configurable Input #2 can be used to connect an indoor relative humidity sensor that has a 0-10 Vdc output for a 0-100% indoor relative humidity input. Models with the reheat option require this indoor relative humidity sensor to determine humidity control demand. Because this is a “powered” sensor, an additional wire to the 24 Vac power supply from the unit is required. The “R” thermostat input can be used for this purpose. The indoor relative humidity sensor can be used along with thermostat control or a zone sensor in combination with a building management system (BAS) that will be controlled from a central location. Some models of the Indoor Relative Humidity Sensor also have a space temperature sensor included eliminating the need for a separate zone sensor.

F.2.4. Building Management/ Control Connections Using DDC

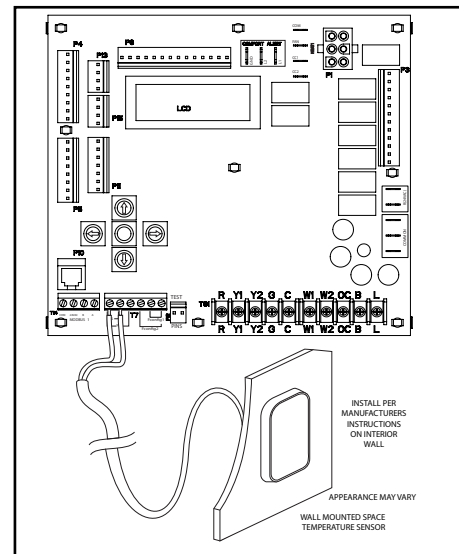
In an application where a third party building management/controls are in use or will be incorporated, units with the integral Rooftop Unit Controller (RTU-C) are communication compatible with the system that supports the BACnet Application Specific Controller device profile, LonMark Space Comfort Controller functional profile, or LonMark Discharge Air Controller functional profile. This is accomplished with a field installed BACnet or LonMark communication module. Refer to the Clear control/DDC manual for more detail.

F.2.5. Smoke Detection Shutdown

The DDC system is designed with an option to trigger and shutdown the unit during a Smoke Fault Condition, as triggered by a factory smoke detector. See the following two sections for more information.

The operation of the smoke fault system can be changed dependent on what is required by the application. Navigate to the Economizer Menu and use the down arrow key to select the Smoke Detection option. The passcode, 5555, is required. Enter the password, press the middle button, use the up arrow to set the first digit to 5, then press the middle button to confirm and move to the next character. Repeat until all 4 characters are entered. If successful, “Access Granted” will display. Then press the down arrow to select Smoke Options. These options will change the operation as follows:

Figure F.2.3.5. - A: Remote Duct Sensor



F. CONTROL / THERMOSTAT WIRING

Shutdown - Stops all operations and turns off the indoor fan.

Pressurize - Ramps the VFD to full speed, opens the economizer up 100%, stops all heating and cooling functions.

Purge - Ramps the VFD to full speed, opens the economizer up 100%, turns on the power exhaust, stops all heating and cooling functions.

Purge with Heat - Ramps the VFD to full speed, opens the economizer up 100%, turns the heating system on full capacity.

Exhaust - Stops all operations, cooling, heating, and indoor fan, opens the economizer up 100% and turns on the power exhaust system.

F.2.5.1. Factory Smoke Detector Kit

If a field or factory installed factory smoke detector kit is used, the kit contains a wiring harness that connects to the 12-Molex plug in the economizer section in place of the 3-wire jumper plug. Retain the jumper plug for future service or maintenance. Use a zip tie to secure the jumper plug to the main wiring harness. Remote fire control panels or other options for the smoke detector will connect directly to the smoke detector controls. Refer to the instructions with those accessories for more information.

F.2.5.2. Remote Smoke Detector/Fire Control Connection

In the air-filter section or on the side economizer, locate the 12-pin Molex jumper plug with the long Red, short Yellow and Orange wire loops; see **Figure F.2.5.2. - B** for reference. Cut the Red wire loop and connect these to a minimum of 18AWG wire that will be connected to a Normally Closed Dry Contact Relay, or in common Fire Control Panels and Smoke Detectors, the Auxiliary Connections for C and NC. See the instructions for the remote devices. Do not connect multiple control boards to the same dry contact relay.

Figure F.2.5.2. – A: Wiring Harness location in Air-Filter Section

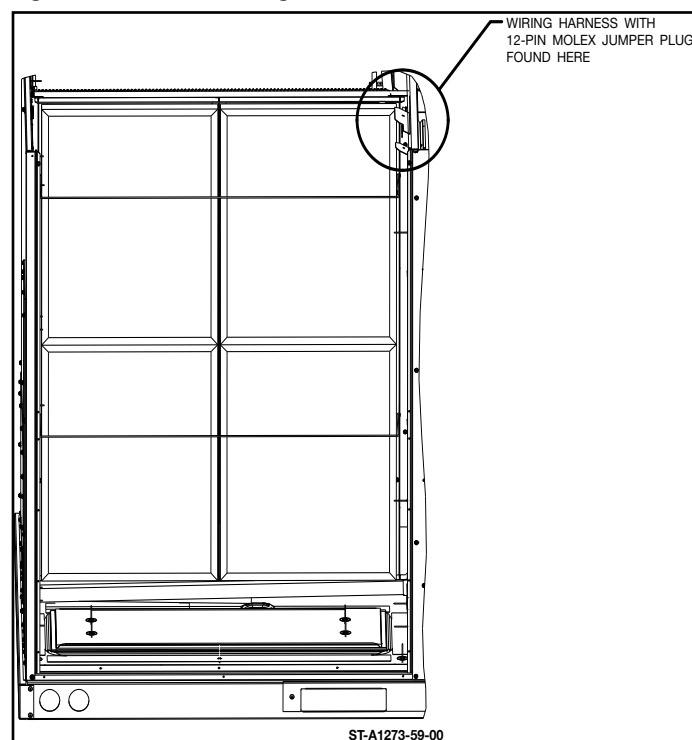
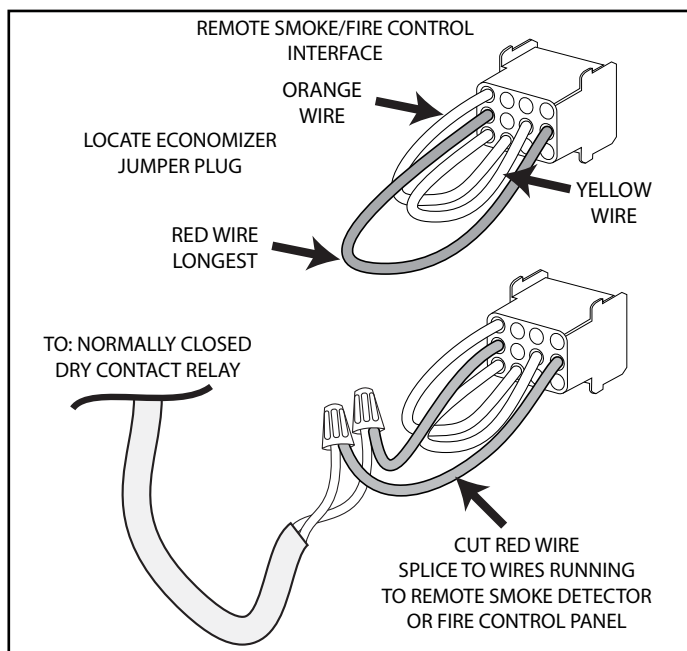


Figure F.2.5.2. – B: Smoke Detector Connection (DDC)



F. CONTROL / THERMOSTAT WIRING

F.3. Routing Control Wiring

Figure F.3. – A: Electrical and Piping Routing

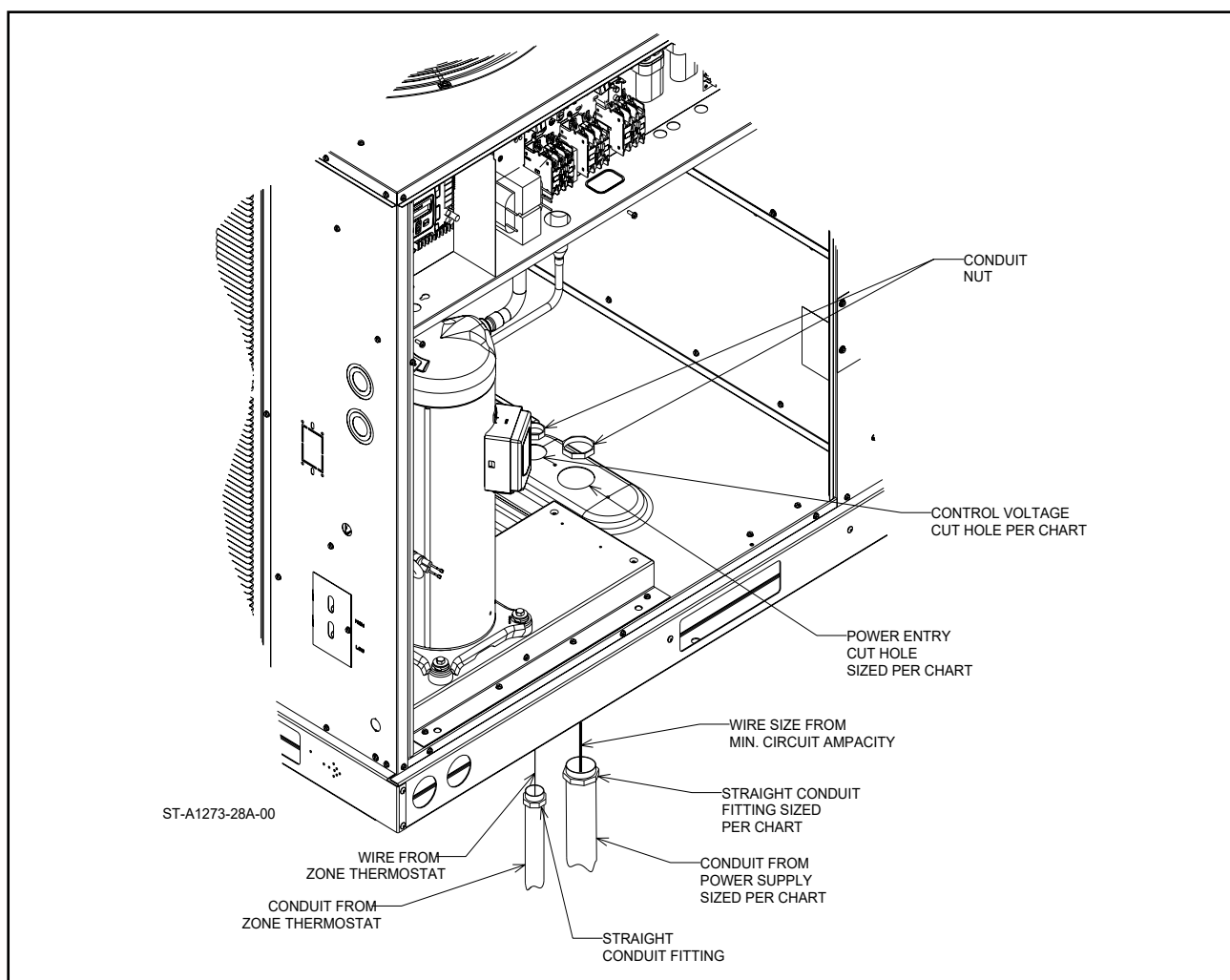


Figure F.3. – B: Hole Sizing for Conduit

	WIRE SIZE, AWG											
	14	12	10	8	6	4	3	2	1	0	00	000
CONDUIT SIZE	1/2"	1/2"	1/2"	3/4"	1"	1"	1-1/4"	1-1/4"	1-1/2"	1-1/2"	2"	2"
HOLE SIZE	7/8"	7/8"	7/8"	1-31/32"	1-23/64"	1-23/64"	1-23/32"	1-23/32"	1-31/32"	1-31/32"	2-15/32"	2-15/32"

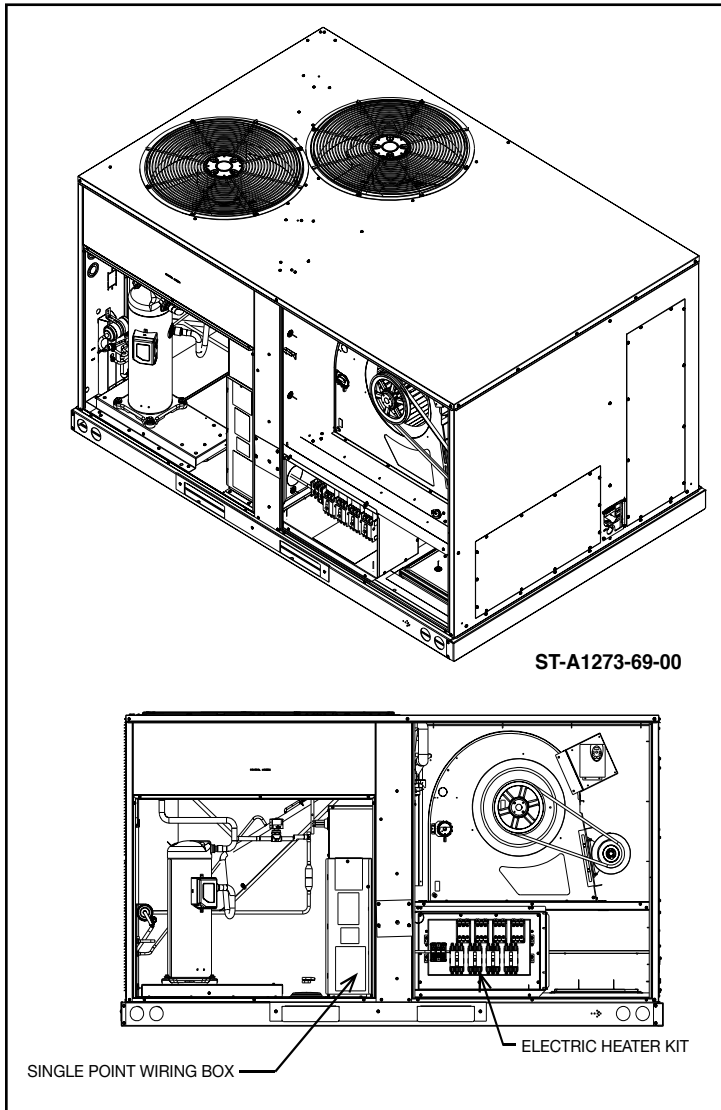
NOTES: 1. DETERMINE REQUIRED WIRE SIZE FROM MINIMUM CIRCUIT AMPACITY SHOWN IN INSTALLATION & OPERATING INSTRUCTION.
 2. BOTTOM POWER ENTRY WILL NOT ACCOMMODATE WIRE LARGER THAN #2 AWG (SHADED AREA).

F.4. Measuring Control Voltage Loads

Use a voltmeter to measure the low voltage and low voltage amp draws during operation. Accessories such as remote smoke detectors and excessive wire length can increase the amp draw on the low voltage wiring. Verify that the total amp draw on the 24Vac side is less than 0.3A in full operation.

H. ELECTRIC HEAT

Figure H. - A: Electric Heat with Single Point Wiring



H.1. Factory Installed Electric Heat

Units shipped with factory installed electric heat will come with a separate document (included in the parts bag) with details regarding the electric heater kits. Refer to this document for diagrams and additional info. Refer to **Appendix E** for heater kit characteristics such as Minimum Circuit Ampacity and Max Fuse sizes.

H.2. Field Installed Electric Heat

Electric heater kits will be shipped with their own installation document in the box. Use the instructions supplied with the kit for best practice. Install all electric heat kits in accordance with the National Electric Code. Refer to **Appendix E** for manufacturer-approved heater kit characteristics such as Minimum Circuit Ampacity and Max Fuse sizes.

A single point kit may be required depending on application.

J. STARTUP AND OPERATION

J.1. Final Inspection

J.1.1. Check for Refrigerant Leaks

Before beginning any work on the system or conducting any hot work, ensure that the area is in the open or that it is adequately ventilated. Ventilation must continue while the unit is being worked on. Ventilation is required to safely disperse any released refrigerant into the atmosphere.

Inspect the unit for any damage to the coils and tubing that could cause a leak.

Under no circumstances shall potential sources of ignition be used to search for or detect refrigerant leaks. A halide torch or any other detector using a naked flame must not be used.

Electronic leak detectors may be used to detect refrigerant leaks, but the sensitivity may not be accurate and may need recalibration to accurately detect R-454B. Before use, ensure that the detector is not a potential ignition source and is suitable for R-454B.

Leak detection equipment shall be set at a percentage of the LFL of the refrigerant and must be calibrated to R-454B.

Leak detection fluids are also suitable but do not use detergents containing chlorine. Examples of leak detection fluids are the bubble method and fluorescent method agents.

If a leak is suspected, all naked flames must be extinguished.

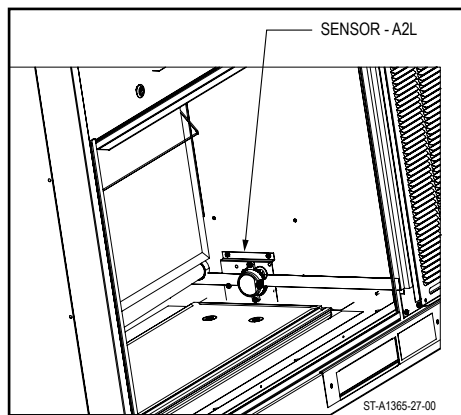
If a refrigerant leak is found that requires brazing, all of the refrigerants must be removed from the system.

J.1.1.1. Refrigerant Leak Detection System

The refrigerant leak detection system will continuously monitor the air for a refrigerant leak. If the leak detection system detects a leak, the system will begin mitigation procedures: the blower will turn on and the compressors will shut down. Note: Gas or electric heat functions may continue during mitigation.

At the end of 15 years or if the refrigerant leak detection system becomes inoperable, the leak detection system must be replaced with components specified by the unit's manufacturer. Refer to the manufacturer's website for replacement components. Refer to the alarm code diagnostics section for refrigerant leak detection system error codes.

Figure J.1.1.1. – A: Refrigerant Detection System Location



If a field-installed economizer will also be installed during the unit installation, the A2L leak detection sensor must be relocated by completing the following steps:

1. Remove the indoor coil access panel assembly and the filter access panel assembly.
2. Disconnect the wire harness attached to the A2L refrigerant detection sensor.
3. Uninstall the A2L refrigerant detection sensor from the bracket by removing the screws securing the sensor to the bracket.
4. Using the same screws, mount the A2L refrigerant detection sensor to the economizer as shown in **Figure J.1.1.1. – B: Alternate Refrigerant Leak Detection System Location**.

NOTE: **Figure J.1.1.1.-B** does not depict every economizer/A2L refrigerant detection sensor available for use in this unit, and only shows one potential unit configuration.

5. Connect the extension harness provided with the field-installed economizer to the wire harness that was disconnected in Step 2. The wire harness will still be connected to the bracket.
6. Route the wire harness along the bulkhead to the unit exterior for visibility.
7. Install the economizer partway, with approximately 4 inches extended outside the unit, leaving access to the A2L refrigerant leak detection sensor. Then, connect the wire harness.

CAUTION: Do not pull the wire harness as this may cause damage to the harness and break the wire ties that hold the wire harness in place.

8. Complete the field-installed economizer's installation according to the economizer Installation and Operation Manual shipped with the accessory.