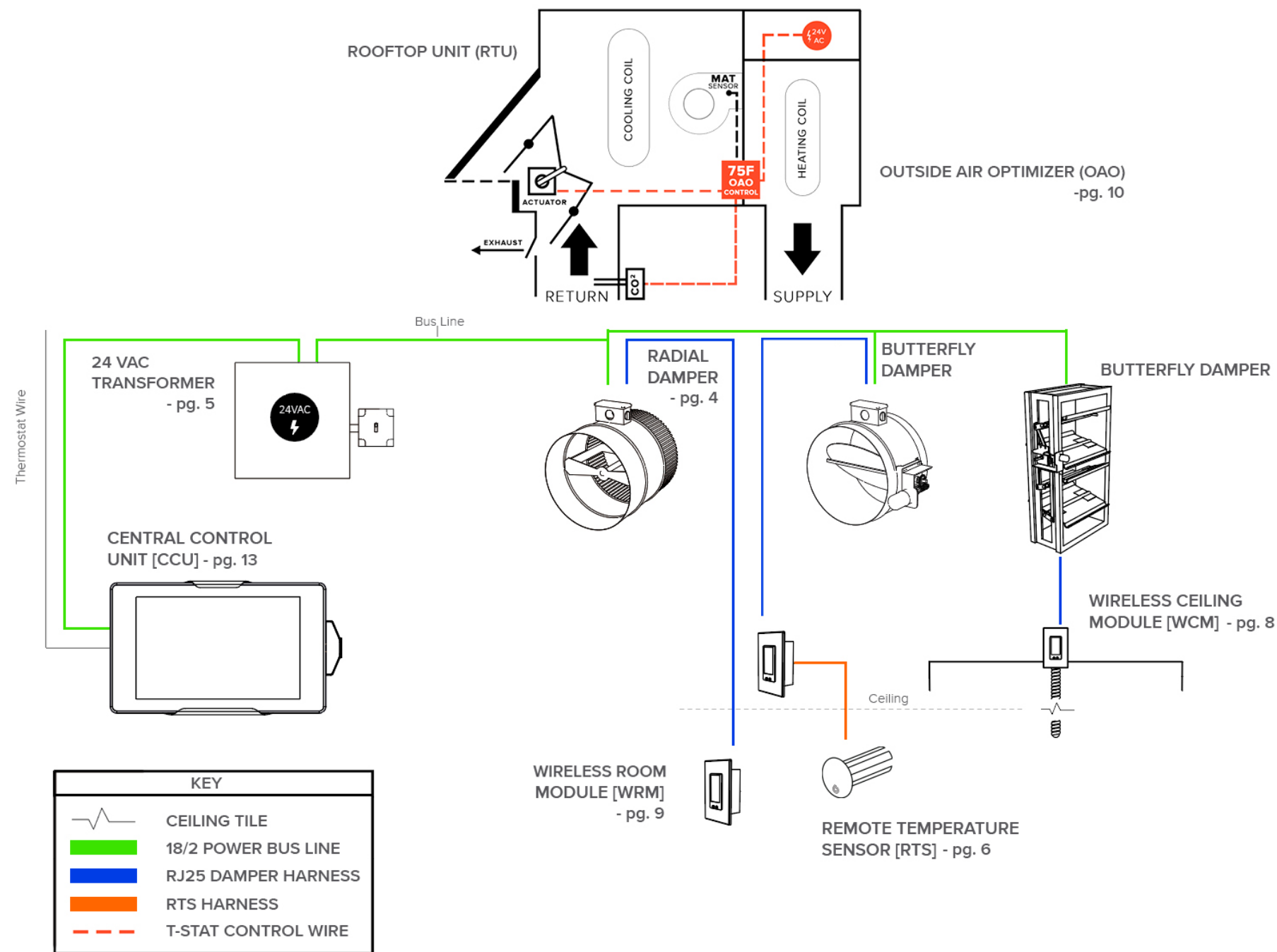




Installation Quick Start Guide



THE 75F SUITE OF SOLUTIONS



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SUPPORT PORTAL:

Visit the 75F Support site below to find all product documentation and support related videos.

<http://www.75f.io/support>

Password: 75FSupport

DOCUMENTS

- Installation Operation Guides
- Submittal
- Site Survey
- QuickStart Guide

VIDEOS

- QuickStart
- Installation
- Configuration
- Wiring



Install Dampers

75F Smart Dampers should be installed in between the takeoff and the flex duct. The damper should be installed with the motor upstream in the rigid duct. The power bus gets plugged into the remote power pass through (RPPT) board on the side of the damper.

Only run the 24VAC power bus line to one damper per zone. One wireless module can control a total of two dampers, but you should only connect power to one damper per wireless module. The wireless modules are powered through that damper and will power the second damper.

STEPS TO INSTALL A DAMPER:

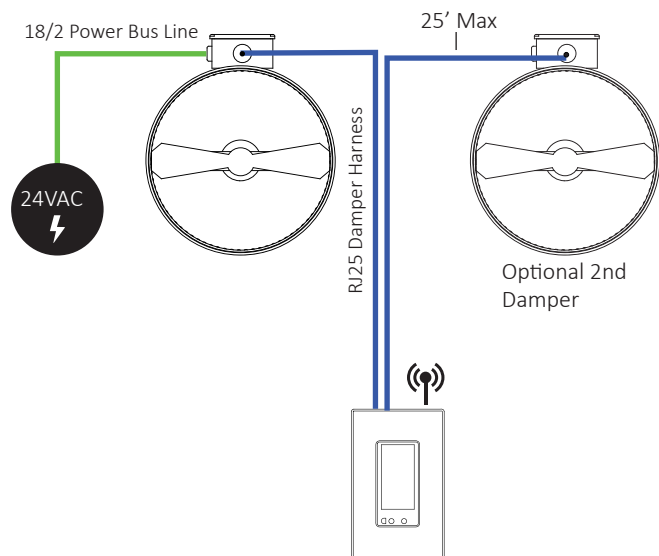
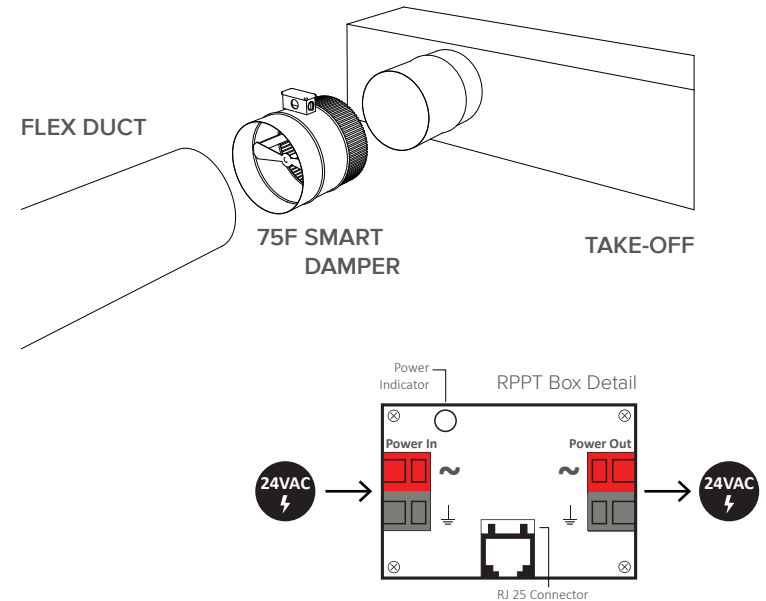
1. Disconnect the flex duct from the take-off.
2. Insert the motor side of the damper upstream in the rigid duct.
3. Fasten the damper to the take-off with at least 3 sheet metal screws equally spaced around the circumference.
4. Pull the flex duct over the other side of the damper and fasten tight with a zip tie.
5. Plug in the 25' damper harness into the connector on the RPPT board and run it over to the WRM.
6. Plug in the 24VAC 18/2 bus line into the RPPT. If there is another zone downstream, connect the 24VAC 18/2 bus line and run to the next primary RPPT.

INCLUDED

- 75F Smart Damper
- Strain Relief Grommets
- Cat5E Damper Harness

NOT INCLUDED

- 18/2 Power Bus Line
- Hardware For Mounting



Watch the video at:
www.75f.io/support

Install Power Supply

Each Central Control Unit comes with one 24VAC power supply. This will power the Central Control Unit and all dampers/sensors communicating to that CCU. It is possible to power the CCU using the T-stat cable from the RTU if there is a R and C wire. **Do not power any dampers using the RTU transformer.

The power supply should be installed within a 50' bus run from the Central Control Unit, above the drop ceiling, inside an electrical enclosure.

Max Power Bus Lengths

24VAC Transformer to Central Control Unit: 50' Max

24VAC Transformer to 75F Dampers: 100' Max

STEPS TO INSTALL THE POWER SUPPLY:

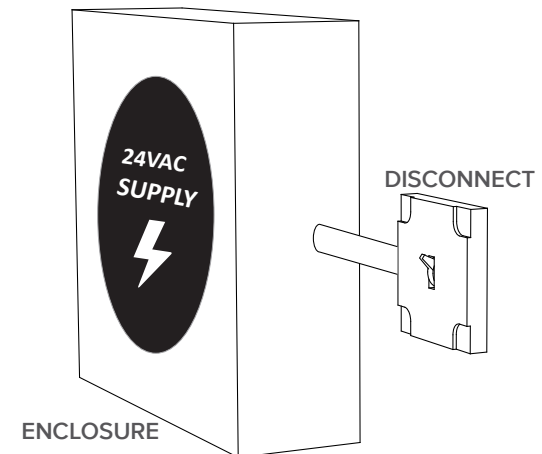
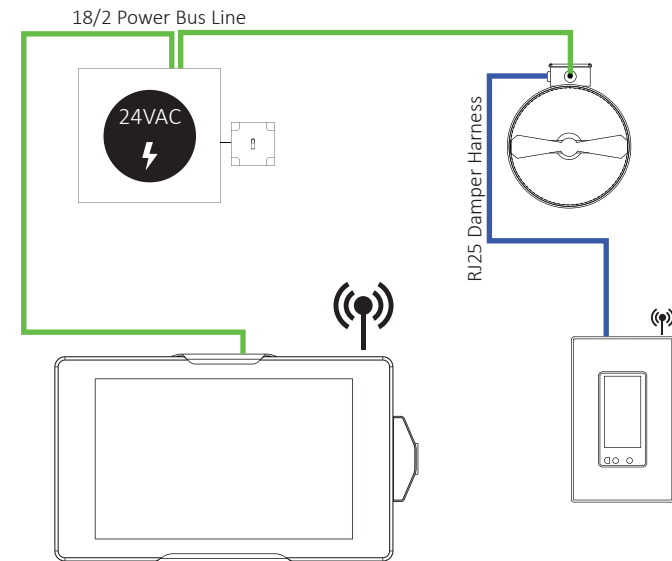
1. Install the power supply inside an electrical enclosure.
2. Install the electrical enclosure above the ceiling in an accessible place.
3. Install a power disconnect switch in line with 120VAC- 240VAC line voltage.
4. Connect the power supply to the 120VAC as labeled. Do not install on a lighting circuit. System needs power all the time.
5. Plug in the 24VAC bus lines as labels indicate.

INCLUDED

- 24VAC Regulated Power Supply

NOT INCLUDED

- Electrical Enclosure
- Hardware for mounting enclosure
- Electrical Switch



Install Remote Temperature Sensor Package (When specified)

The Remote Temperature Sensor (RTS) is powered by one damper and controls up to two dampers at one time. The temperature sensor is pre-installed in the provided plastic backplate. There is a 20' harness that connects the Wireless Room Module (WRM) to the RTS.

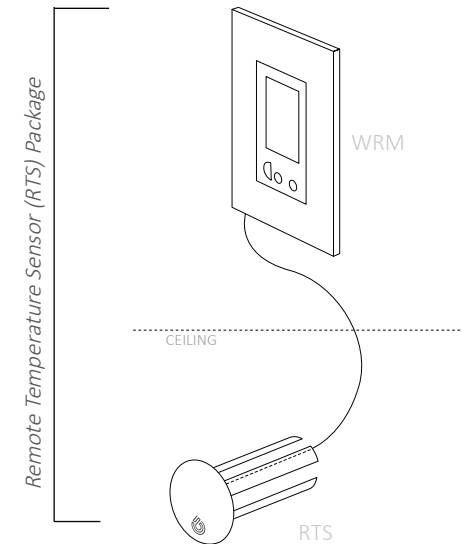
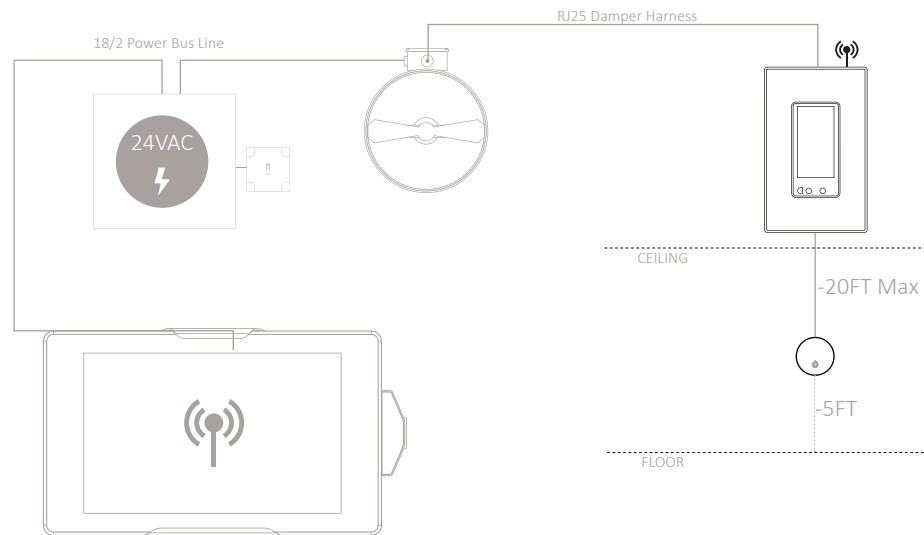
NOTE: Each WRM must stay with the temperature sensor it was sent with as they were calibrated together.

STEPS TO INSTALL REMOTE TEMPERATURE SENSOR:

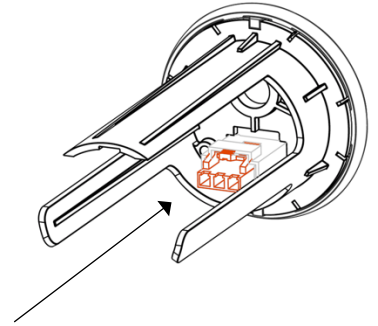
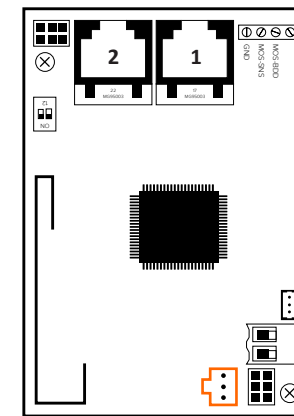
1. Identify the ideal location and make sure that you have a clear path to pull the remote temperature sensor harness down the wall.

NOTE: Stay away from heat producing equipment, diffusers, and direct sunlight.

2. Drill a 1 inch hole in the wall, 5' high.
3. Install the junction box above the ceiling nearest where you drilled the hole below.
4. Pull the pre-fabricated 20' remote temperature sensor harness down the wall and pull it through the 1" hole.

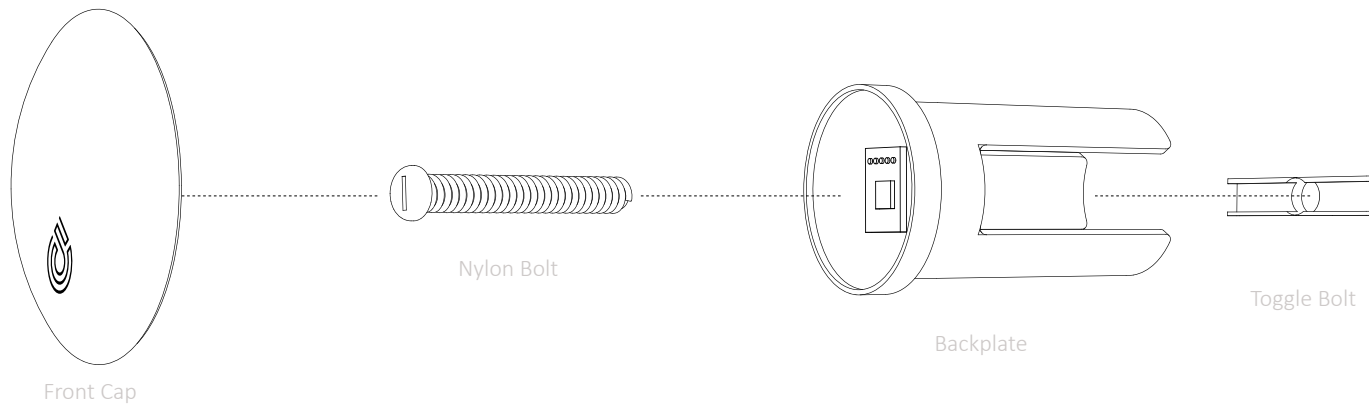


When using only one damper, it must be plugged into Port 1.



5. Remove the cap on the Remote Temperature sensor and insert the anchor bolt through the backplate and tighten the anchor enough so it catches on the plastic extrusion on the back.
6. Plug the remote temperature sensor harness into the back of the backplate to connect the sensor.
7. Insert the backplate into the wall and tighten the dry wall anchor bolt so that the backplate is snug against the wall.
8. Snap cap onto the backplate.
9. Pull sensor cable and damper harnesses into the junction box and snap in the sensor cable to the back of the Wireless Room Module.
10. Mount the Wireless Room Module component to the junction box.

NOTE: Make sure the grooves on the Front Cap line up with the grooves on the Backplate so that the logo points up.



INCLUDED

- Wireless Room Module
- Junction Box
- 2 X ¾ inch #6 wood screws
- Backplate
- Faceplate
- Remote Temp. Sensor Harness

NOT INCLUDED

- Mounting hardware for junction box.

Install Wireless Ceiling Module (When specified)

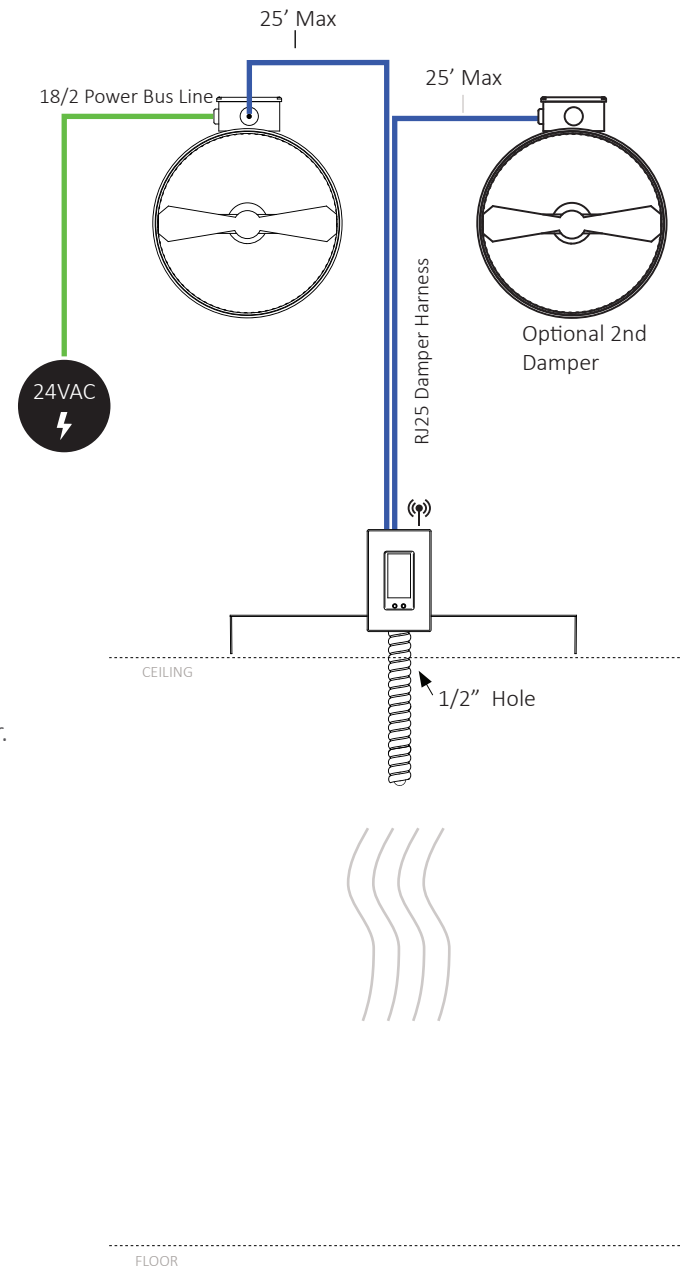
The Wireless Ceiling Module is powered by one damper and controls up to two dampers at one time. The temperature sensor is mounted at the end of a 3 foot stainless steel, flexible goose neck. The module is installed in a ceiling mount that can be inserted above a ceiling tile, and the goose neck should be dropped into the space through a 1/2" hole.

STEPS TO INSTALL A WIRELESS CEILING MODULE:

1. Remove the front cover of the junction box to access the back of the Wireless Ceiling Module.
2. Pull damper harnesses through the side of the junction box and plug into the back of the Wireless Ceiling Module. If there is only one damper plug it into port 1.
3. Put the Wireless Ceiling Module back onto the junction box.
4. The junction box metal T-grid bracket mounts to the ceiling T-grid.
5. Insert the goose neck through the ceiling tile enough so that it is ~7' from the floor.

INCLUDED

- Junction Box
- Ceiling Tile Bracket
- Wireless Room Module
- Goose neck with remote sensor
- Rubber cap



Install Wireless Room Module (When specified)

The Wireless Room Module (WRM) is powered by one damper and controls up to two dampers at one time.

NOTE: The WRM is powered by only one damper, which should be plugged into port 1, so only connect the 24VAC bus line to one damper that is connected to the WRM.

STEPS TO INSTALL A WIRELESS ROOM MODULE:

1. Identify the ideal location and make sure that you have a clear path to pull the wires down.

NOTE: Stay away from heat producing equipment, diffusers, and direct sunlight.

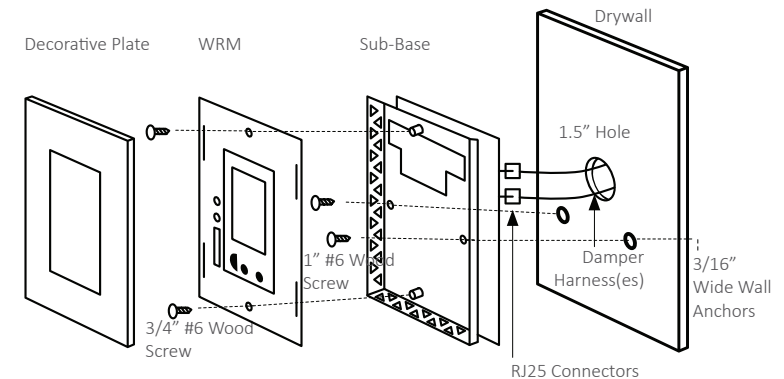
2. Drill a 1.5" hole in the wall, 5' high.
3. Pull damper harnesses down the wall and through the 1.5" hole
4. Install the sub base making sure it's level using the #6- 1" screws and the corresponding drywall anchors.
5. Connect the damper harness.
6. Screw in the Wireless Room Module using the supplied #6- 3/4" screws.
7. Attach the faceplate by snapping it on arrow side up.

INCLUDED

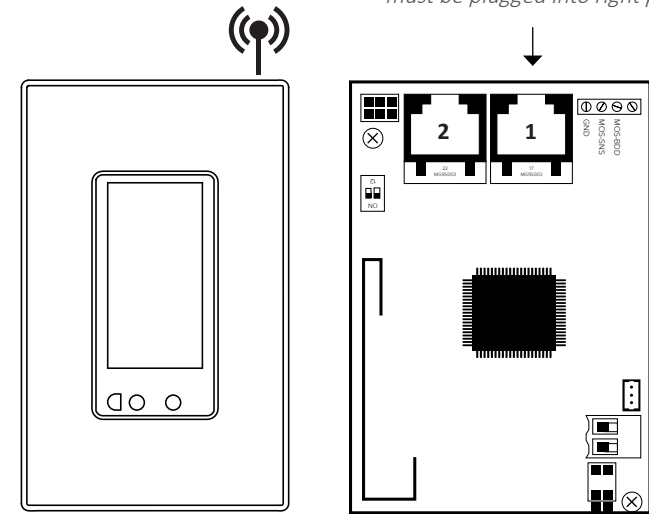
- Wireless Room Module
- Sub Base
- Faceplate
- 2 X #6 3/4 wood screws
- 2 X #6 1.5 wood screws
- 2 X dry wall anchors

NOT INCLUDED

- 1.5" hole saw



If there is only one damper used, it must be plugged into right port.



Install Outside Air Optimizer (When specified)

The Outside Air Optimizer (OAO) can often be installed entirely in the Rooftop Unit (RTU) and is powered by the existing 24VAC. This takes over control of the economizer actuator and regulates the amount of fresh air in the building and, if enthalpy conditions are right, will bring in free cooling as well. When paired with peripherals, the OAO can also monitor and regulate NO2 and CO levels and can also assist in regulating the differential pressure in the building.

STEPS TO INSTALL AN OUTSIDE AIR OPTIMIZER:

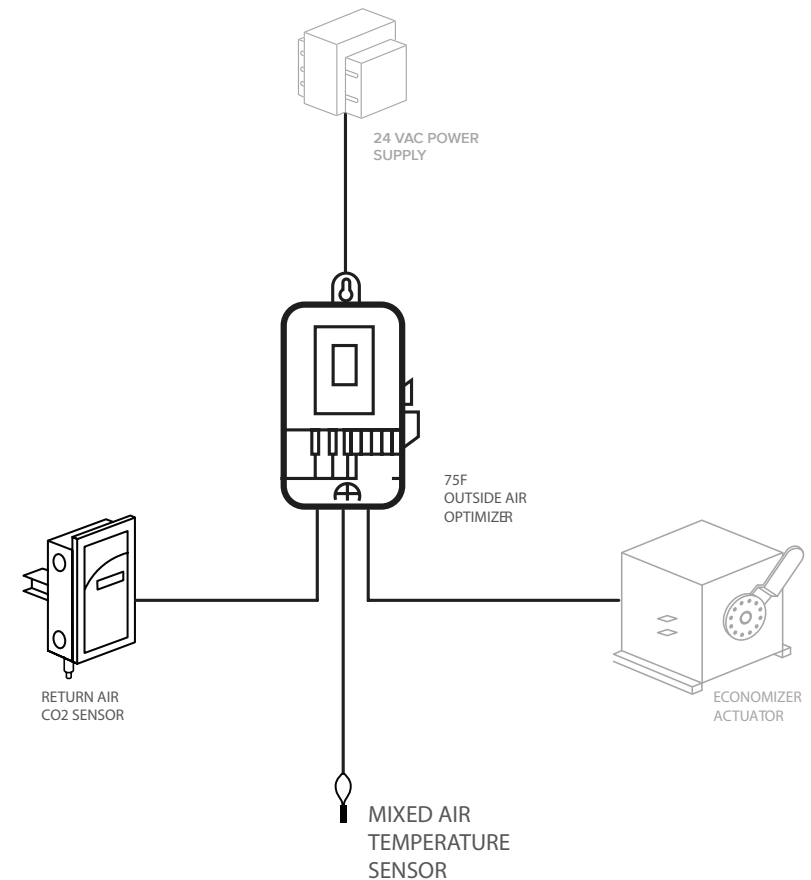
1. Install the CO2 sensor just below the economizer damper in the return duct.
2. Install the Economizer control box in the blower compartment.
3. Run 18/3 wire from the controller to the actuator and another 18/3 wire from the controller to the CO2 sensor.
4. Wire the CO2 and motor as specified by the wiring diagram.
5. Run 24VAC to the controller using 18/2 wire.
6. Install the mixed air temperature sensor in the blower housing and attach to the controller.

INCLUDED

- Outside Air Optimizer Controller
- CO2 Sensor
- Mixed Air Temperature Sensor + Grommet

NOT INCLUDED

- Thermostat Wire
- Zip ties

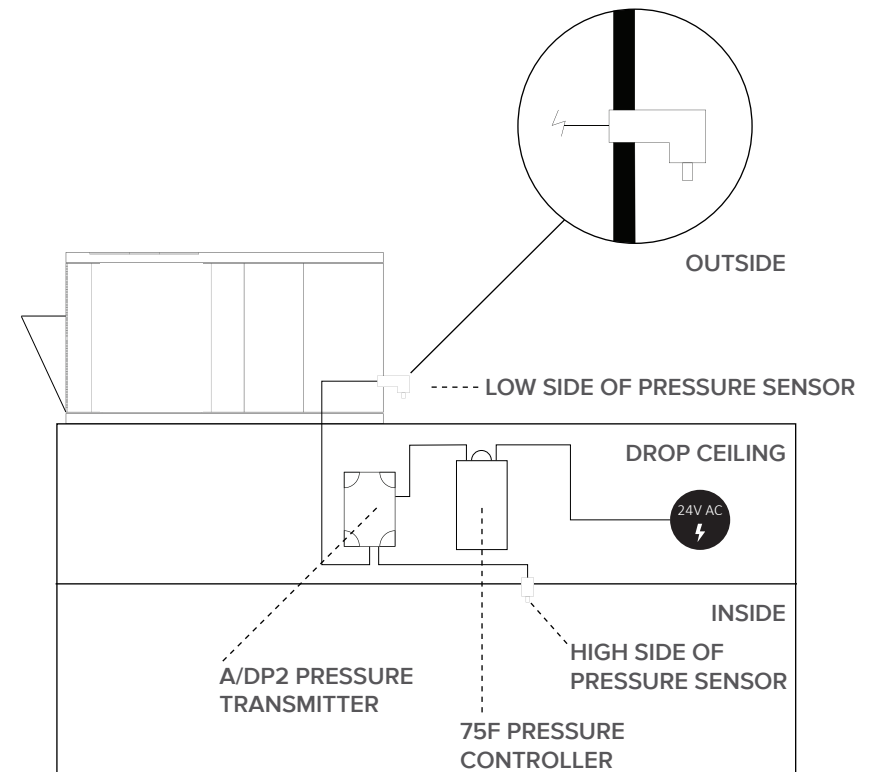


Install Differential Pressure Sensor Package (When specified)

The differential pressure package is installed the blower compartment or in the drop ceiling. Both pressure transmitter and pressure controller are powered by 24VAC. There is a LOW pressure tube installed outside the RTU and a HIGH pressure tube installed inside the building. For restaurant applications where kitchen and dining have separate RTUs, there is one package installed in the dining room and one installed in the kitchen.

STEPS TO INSTALL DIFFERENTIAL PRESSURE SENSOR PACKAGE:

1. Install the differential pressure sensor package above the drop ceiling on the trunk in a safe, dry location, not exposed to extreme weather conditions.
2. The LOW pressure tube is exposed to the outside of the building and can be installed through the RTU wall using the supplied hardware to prevent precipitation and wind from entering the tube.
3. The HIGH pressure tube is exposed to the space inside the building. Using the hardware provided, fasten the end of the tube into the ceiling tile.
4. Run 18/3 wire from the pressure controller to the pressure transmitter, following the wire diagram included in the controller.
5. Pair and configure according the the Pressure Sensor Installation Operation Guide.



INCLUDED

- 75F Pressure Controller
- A/DP2 Pressure Transmitter
- 1/4"OD 0.170"ID Tubing
- Interior & Exterior Wind Dampeners

NOT INCLUDED

- Thermostat Wire

Install Frostless Drop Ceiling (When specified)

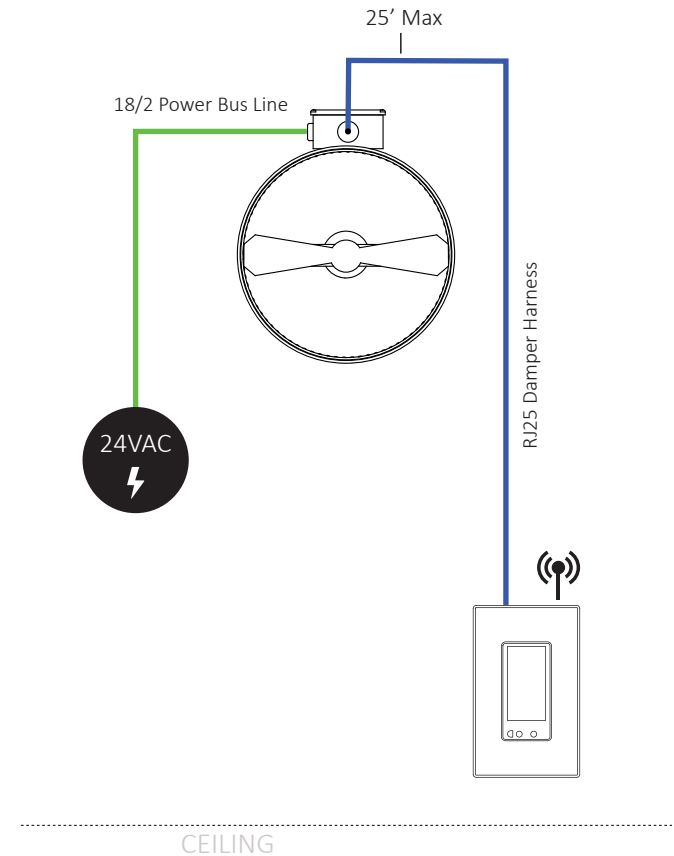
The Frostless Drop Ceiling is a solution that monitors the temperature in the drop ceiling area and modulates a 10" damper to keep the space from dropping below a critical temperature. This solution is generally utilized in a space with vital water or soda lines.

STEPS TO INSTALL FROSTLESS PLENUM:

1. Create a new 10" take off from the supply duct.

NOTE: The Frostless Plenum should be installed on the dining RTU and the flex duct should be run over to the soda fountain water lines. This is because the kitchen unit is more likely to run cooling in the winter.

2. Install the 10" 75F Smart damper to the takeoff.
3. Install flex duct to the damper and run to the soda fountain water lines.
4. Install the Wireless Room Module in the provided enclosure towards the middle of the building, within 25' of the 10" damper in the drop ceiling cavity.



INCLUDED

- Wireless Room Module
- 10" 75F Smart Damper
- Strain relief grommets
- 2 #6-3/4" screws
- Single gang box

NOT INCLUDED

- 18/2 Wire
- Hardware For Mounting

Install Central Control Unit

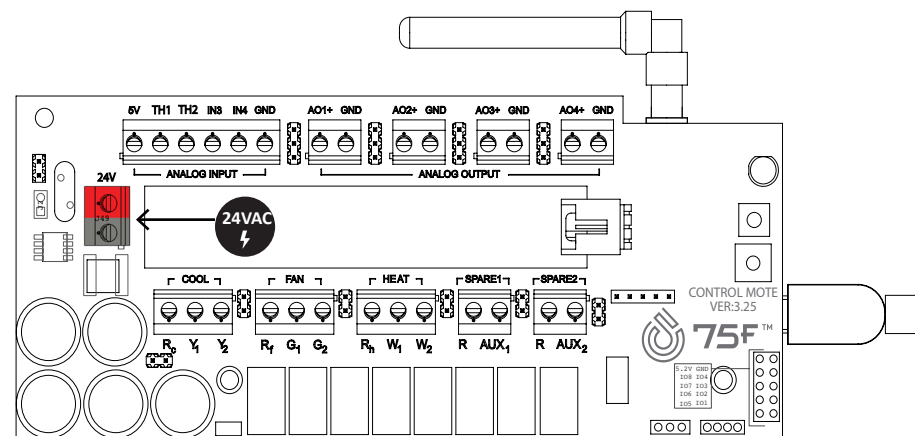
The Central Control Unit (CCU) is the communication interface for all 75F solutions and powered by 24VAC. The thermostat wire is terminated on the board to control the Rooftop Unit (RTU). It is recommended that the CCU is surface mounted but in an office environment flush mounting is acceptable.

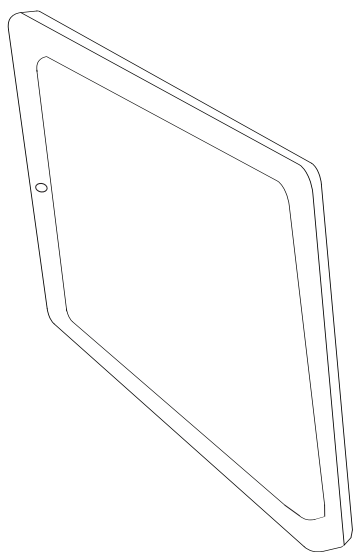
STEPS TO INSTALL A CENTRAL CONTROL UNIT:

1. Remove the Central Control Unit from packaging and assemble as shown on the next page.
2. For surface mounting, mark your holes using the given template, ensuring that the holes are level. For flush mounting, mark the gray area of the template level on the wall and cut out.
3. Insert the anchors and screw the pan heads in until they are ~1/8" from the wall. For flush mounting, screw the 4 wings and screws together through the holes in the white plastic.
4. Attach the CCU to the wall and attach the thermostat wire and 24VAC power according to the wiring diagram.
5. Fasten the CCU to the wall, slide the tablet into the metal bracket, and plug in the USB cable to the tablet.
6. Turn on the tablet and complete the Initial Wizard.

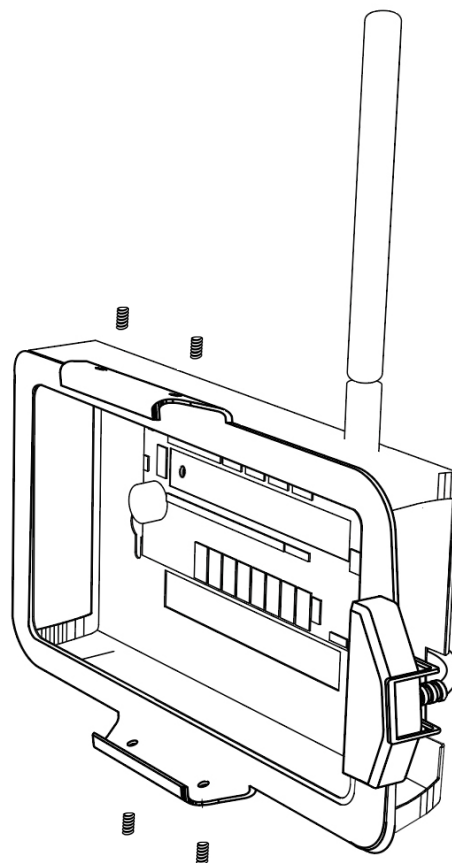
INCLUDED

- Wireless Room Module
- Sub-base
- 2 X ¾ in. #6 wood screws
- 2 X 1.5 in. #6 dry wall screws
- 2 X dry wall anchors
- Central Control Unit
- 24VAC Power Supply
- Antenna
- 4 X Wood screws and wings
- Allan wrench

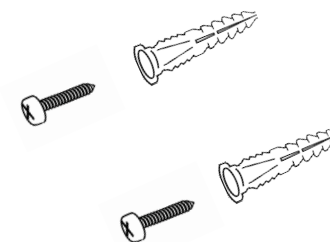




75F TABLET



4 SECURITY SET SCREWS



2 SCREWS
2 ANCHORS

Commissioning the System

STEPS TO COMMISSION CENTRAL CONTROL UNIT:

1. Turn on power to the tablet.
2. Walk through the Initial Wizard.

STEPS TO COMMISSION SENSORS:

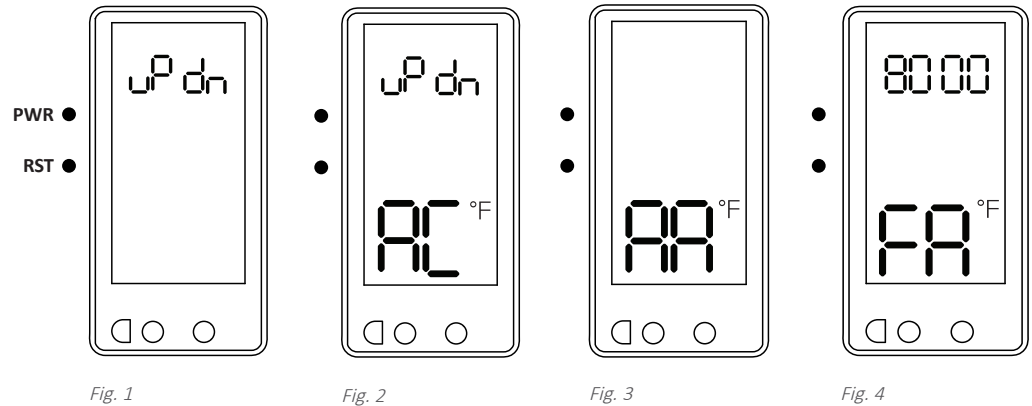
1. Apply 24VAC power to the bus line.
2. Push “Up” and “Down” buttons simultaneously.
 - a. This begins damper calibration mode
 - b. 300 second countdown begins
 - c. Damper moves forward 5 samples, then returns home
 - d. Damper moves forward to fully closed, then fully open (home).
 - e. Display indicates AC (all clear) (Fig. 2)
3. To pair the Wireless Module when it is showing AC, push “Up” and “Down” buttons simultaneously. The display will show AA (Fig. 3).
4. At the CCU, click “+Pair Module” in the floor planner to pair a WRM.
5. When the Wireless Module paired correctly it will flash an address and FA like Fig.4.
6. Do this one Wireless Module at a time until they are all paired.

STEPS TO COMMISSION OUTSIDE AIR OPTIMIZER:

1. The OAO does not have a 75F radial damper attached to the controller, so when you try to calibrate the device it will receive an error. To bypass this, take off the faceplate and while holding the RST button, push the PWR button (Fig. 1) while holding the RST button and the WRM will read “AC” allowing you to pair the device.
2. To pair the OAO with the CCU, go into Setup > Settings > System Devices > OAO and click “Pair Device”.

NOTE: Pair all sensors and make sure they are communicating.

NOTE: If you see “Err” on the WRM this means a damper is disconnected or jammed. See troubleshooting in the related Installation Operation Guide for more details.



NOTE: Only have one WRM reading AA at a time while pairing.



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Burnsville, MN 55337

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