Zoned Damper Control

Installation Guide
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CHOOSING THE CORRECT DAMPER CONTROLLER FOR EACH ZONE...

The Pelican solution is comprised of a Pelican zone controller residing at the HVAC equipment and multiple Pelican zone damper controllers installed around the building. Communication between the zone controller to the zone damper controllers are through Pelican’s self-healing wireless mesh network.

There are two zone damper control options:

In cases where wire can easily be ran or already exists between the damper actuator and thermostat, a Pelican 24VAC powered thermostat can be installed in the conditioned space and directly wired to the damper actuator. As shown in:

- **Figure 1.1 – 24VAC Powered Thermostat Wired Directly to a Single Damper Actuator**
- **Figure 1.2 – 24VAC Powered Thermostat Wired Directly to Two Damper Actuators**

Proceed to Page 8 for further information on this option.

In cases where wire is unable to be ran from the damper actuator into the conditioned space, a Pelican 24VAC damper actuator controller (TCM1) can be installed at the actuator and a Pelican Remote Wireless Sensor can be installed in the conditioned space. The TCM1 and Remote Wireless Sensor communicate wirelessly between each other. As shown in:

- **Fig. 2.1 – 24VAC Damper Actuator Controller (TCM1) Wireless Communication to a Remote Thermostat for Single Damper Actuator Control**
- **Fig. 2.2 – 24VAC Damper Actuator Controller (TCM1) Wireless Communication to a Remote Thermostat for Two Damper Actuator Control**

Proceed to Page 16 for further information on this option.
Fig. 1.1 – 24VAC Powered Thermostat Wired Directly to Single Damper Actuator

COMMUNICATION ACROSS PELICAN SELF-HEALING WIRELESS MESH NETWORK (IEEE 802.15.4).

ONE PELICAN GATEWAY CAN COMMUNICATE WITH UP TO 2000 PELICAN DEVICES.

HARDWIRED ETHERNET CONNECTION TO PELICAN GATEWAY.

INTERNET ENABLED THERMOSTAT IS WIRED TO ONE 24VAC ZONE ACTUATOR.

WIRELESS ANTENNA FROM PELICAN ZONE CONTROLLER. ANTENNA CAN BE INSTALLED ABOVE OR BELOW ROOF LINE DEPENDING ON INSTALLATION ENVIRONMENTS AND WIRELESS COMMUNICATION REQUIREMENTS.

PELICAN ZONE CONTROLLER. CAN BE INSTALLED ABOVE OR BELOW ROOF LINE DEPENDING ON INSTALLATION ENVIRONMENTS.
Fig. 1.2 – 24VAC Powered Thermostat Wired Directly to Two Damper Actuators

- **COMMUNICATION ACROSS PELICAN SELF-HEALING WIRELESS MESH NETWORK (IEEE 802.15.4).**
- **ONE PELICAN GATEWAY CAN COMMUNICATE WITH UP TO 2000 PELICAN DEVICES.**
- **HARDWIRED ETHERNET CONNECTION TO PELICAN GATEWAY.**
- **INTERNET ENABLED THERMOSTAT IS WIRED TO TWO ZONE ACTUATORS.**
- **WIRELESS ANTENNA FROM PELICAN ZONE CONTROLLER. ANTENNA CAN BE INSTALLED ABOVE OR BELOW ROOF LINE DEPENDING ON INSTALLATION ENVIRONMENTS AND WIRELESS COMMUNICATION REQUIREMENTS.**
- **PELICAN COLD DECK ZONE CONTROLLER. CAN BE INSTALLED ABOVE OR BELOW ROOF LINE DEPENDING ON INSTALLATION ENVIRONMENTS.**
- **PELICAN HOT DECK ZONE CONTROLLER. CAN BE INSTALLED ABOVE OR BELOW ROOF LINE DEPENDING ON INSTALLATION ENVIRONMENTS.**
Fig. 2.1 – 24VAC Damper Actuator Controller (TCM1) Wireless Communication to a Remote Thermostat for Single Damper Actuator Control

1. COMMUNICATION ACROSS PELICAN SELF-HEALING WIRELESS MESH NETWORK (IEEE 802.15.4).
2. ONE PELICAN GATEWAY CAN COMMUNICATE WITH UP TO 2000 PELICAN DEVICES.
3. HARDWIRED ETHERNET CONNECTION TO PELICAN GATEWAY.
4. INTERNET ENABLED TCM1 IS WIRED TO ONE ZONE ACTUATOR. RT1 REMOTE SENSOR COMMUNICATES TO TCM1 THROUGH WIRELESS MESH NETWORK.
5. WIRELESS ANTENNA FROM PELICAN ZONE CONTROLLER. ANTENNA CAN BE INSTALLED ABOVE OR BELOW ROOF LINE DEPENDING ON INSTALLATION ENVIRONMENTS AND WIRELESS COMMUNICATION REQUIREMENTS.
6. PELICAN ZONE CONTROLLER CAN BE INSTALLED ABOVE OR BELOW ROOF LINE DEPENDING ON INSTALLATION ENVIRONMENTS.
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HARDWIRED ETHERNET CONNECTION TO PELICAN GATEWAY.

INTERNET ENABLED TCM1 IS WIRED TO TWO ZONE ACTUATORS. RT1 REMOTE SENSOR COMMUNICATES TO TCM1 THROUGH WIRELESS MESH NETWORK.

WIRELESS ANTENNA FROM PELICAN ZONE CONTROLLER. ANTENNA CAN BE INSTALLED ABOVE OR BELOW ROOF LINE DEPENDING ON INSTALLATION ENVIRONMENTS.

PELICAN COLD DECK ZONE CONTROLLER. CAN BE INSTALLED ABOVE OR BELOW ROOF LINE DEPENDING ON INSTALLATION ENVIRONMENTS.

PELICAN HOT DECK ZONE CONTROLLER. CAN BE INSTALLED ABOVE OR BELOW ROOF LINE DEPENDING ON INSTALLATION ENVIRONMENTS.
WHEN INSTALLING THIS PRODUCT...

1. Read these instructions carefully and thoroughly. Failure to follow these instructions or a result of improper installation, service, adjustments, maintenance, and/or use can result in personal injury, damage to personal property, and/or cause a hazardous and dangerous situation.

2. Check the ratings and description given in the specification of the product to make sure the product is suitable for your application.

3. Installer must be trained and experienced service technician. Follow all safety codes and regulations and all local and state building codes. Read instructions thoroughly and follow any warnings or notes.

4. After installation is complete, check product operation as provided in these instructions.

⚠️ CAUTION

1. Disconnect power supply before connecting any wiring to device to prevent electrical shock or damage to equipment.
2. This guide is designed for certified, trained, and experienced service technicians. Failure to follow installation instructions does not alleviate installer responsibility to protect the equipment, the property, and the device it is being connected too. If at anytime if there is concern or confusion about how to install this device, immediately stop what you are doing and either contact Pelican Wireless Systems or a certified Pelican Wireless Systems distributor.

⚠️ WARNING

1. This equipment is designed to communicate over radio frequency to other Pelican equipment only. If this equipment is not installed and used in accordance with the instruction manual, you may experience wireless interference. This device has been tested and complies with FCC rules and regulations.

LOCATION AND MOUNTING

Choose a location for the Pelican zone thermostat that represents that spaces temperature, and where connections are accessible. The zone thermostat is directly wired to the damper actuator.
Fig. 3.1 – Pelican 24 VAC Thermostat Terminal Designations

### SINGLE DUCT

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<td>Common 24VAC</td>
</tr>
<tr>
<td>R</td>
<td>24VAC Power</td>
</tr>
<tr>
<td>Y</td>
<td>24VAC Damper Power Open</td>
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<td>Y2</td>
<td>24VAC Damper Power Close</td>
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<tr>
<td>W</td>
<td>24VAC Reheat Power Open or On</td>
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<td>24VAC Power</td>
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<tr>
<td>Y</td>
<td>24VAC Cold Damper Power Open</td>
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<td>Y2</td>
<td>24VAC Cold Damper Power Close</td>
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<tr>
<td>W</td>
<td>24VAC Heat Damper Power Open</td>
</tr>
<tr>
<td>W2</td>
<td>24VAC Heat Damper Power Close</td>
</tr>
</tbody>
</table>
Mounting
Included in the Pelican thermostat kit are two sets of mounting screws. Choose the correct screw and mounting holes for the location the thermostat is being installed.

LIMITED THREE WIRE OPTION (only if required)
In cases where there is limited wiring between the damper actuator and thermostat, the WM500 Wiring Module can be removed from the Pelican thermostat. The WM500 can be placed at the damper actuator and wired to the thermostat with a maximum of 500 feet of standard unshielded thermostat wires.

1. Remove the wire module (WM500) from the thermostat base
Loosen the R and Rc terminals to remove the jumper. Loosen R, C, D terminals on WM500. Gently slide WM500 to the right to remove.

2. Mount WM500 next to damper actuator.
Connect WM500 to Damper Actuator following same wiring control diagrams found in Thermostat Detail Wiring Guide (Pg. 12-15) of this document. 24VAC power needs to be supplied to both the WM500, Pelican Thermostat, and Damper Actuator.

3. Connect R, C, D communication wire from WM500 to Pelican Thermostat.
INSTALLATION

1. Remove the thermostat’s cover by gently pulling the thermostat faceplate away from the back plate.

2. Place the thermostat back plate on a flat surface for mounting. Mark mounting holes and drill 3/16” holes into mounting surface. Note the wiring channel.

3. Thermostat wiring diagrams are shown in the Thermostat Detail Wiring Diagram section as follows:

   a. Page 12 - Fig. 4 Single Duct: Power-Open / Spring-Return Damper Actuator
   b. Page 12 - Fig. 5 Single Duct: Power-Closed / Spring-Return Damper Actuator
   c. Page 13 - Fig. 6 Single Duct: Power-Open / Power-Closed or Floating Damper Actuator
   d. Page 13 - Fig. 7 Dual Duct: Power-Open / Spring-Return Damper Actuators
   e. Page 14 - Fig. 8 Dual Duct: Power-Closed / Spring-Return Damper Actuators
   f. Page 14 - Fig. 9 Dual Duct: Power-Open / Power-Closed or Floating Damper Actuators
   g. Page 15 - Fig. 10 Reheat: ON/OFF Electric or Power-Open / Spring-Return Valve Motor
   h. Page 15 - Fig. 11 Reheat: Power-Open / Power-Closed or Floating Valve Motor

WARNING

The following thermostat wiring diagrams are to be used as reference to the most common application where a Pelican thermostat will be installed to control specific damper actuators. For dual ducted applications, a single Pelican thermostat will control both the hot and cold damper actuators for the zone. In the case the system you are connecting the Pelican thermostat to is not defined in this installation guide. Contact Pelican Technical Support for assistance at 888-512-0490 or email support@pelicanwireless.com.
Fig. 4 – Single Duct: Power-Open / Spring-Return Damper Actuator

1. POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.
2. POWER TO EQUIPMENT 24VAC. SIZE TRANSFORMERS AS NEEDED.
3. OUTPUT IS 24VAC @ 1A. PROVIDE PROPERLY SIZED RELAYS AS NEEDED.

Fig. 5 – Single Duct: Power-Closed / Spring-Return Damper Actuator

1. POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.
2. POWER TO EQUIPMENT 24VAC. SIZE TRANSFORMERS AS NEEDED.
3. OUTPUT IS 24VAC @ 1A. PROVIDE PROPERLY SIZED RELAYS AS NEEDED.
Fig. 6 – Single Duct: Power-Open / Power-Closed or Floating Damper Actuator

<table>
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<th>Transformer</th>
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<tbody>
<tr>
<td>COLD DAMPER</td>
</tr>
<tr>
<td>24VAC POWER-OPEN SPRING-RETURN ACTUATOR</td>
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<tr>
<td>COMMON</td>
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<tr>
<td>OPEN</td>
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<tr>
<td>CLOSE</td>
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FOR LIMITED WIRE INSTALLATIONS REFERENCE PAGE 10 OF THIS INSTALL GUIDE.

POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.

POWER TO EQUIPMENT 24VAC. SIZE TRANSFORMERS AS NEEDED.

OUTPUT IS 24VAC @ 1A. PROVIDE PROPERLY Sized RELAYS AS NEEDED.

Fig. 7 – Dual Duct: Power-Open / Spring-Return Damper Actuators

<table>
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<tr>
<th>Transformer</th>
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<tbody>
<tr>
<td>COLD DAMPER</td>
</tr>
<tr>
<td>24VAC POWER-OPEN SPRING-RETURN ACTUATOR</td>
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<td>HEAT DAMPER</td>
</tr>
<tr>
<td>24VAC POWER-OPEN SPRING-RETURN ACTUATOR</td>
</tr>
<tr>
<td>COMMON</td>
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FOR LIMITED WIRE INSTALLATIONS REFERENCE PAGE 10 OF THIS INSTALL GUIDE.

POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.

POWER TO EQUIPMENT 24VAC. SIZE TRANSFORMERS AS NEEDED.

OUTPUT IS 24VAC @ 1A. PROVIDE PROPERLY Sized RELAYS AS NEEDED.
**Fig. 8 – Dual Duct: Power-Closed / Spring-Return Damper Actuators**

1. Transformer
2. Cold Damper
   24VAC Power-Closed Spring-Return Actuator
3. Heat Damper
   24VAC Power-Closed Spring-Return Actuator

For limited wire installations reference page 10 of this install guide.

Power supply, provide disconnect means and overload protection as required.

Power to equipment 24VAC. Size transformers as needed.

Output is 24VAC @ 1A. Provide properly sized relays as needed.

**Fig. 9 – Dual Duct: Power-Open / Power-Closed or Floating Damper Actuators**

1. Transformer
2. Cold Damper
   24VAC Power-Open Power-Closed Actuator
3. Heat Damper
   24VAC Power-Open Power-Closed Actuator

For limited wire installations reference page 10 of this install guide.

Power supply, provide disconnect means and overload protection as required.

Power to equipment 24VAC. Size transformers as needed.

Output is 24VAC @ 1A. Provide properly sized relays as needed.
Fig. 10 – Reheat: ON/OFF Electric or Power-Open / Spring-Return Valve Motor

1. Transformer
2. 24VAC Reheat Valve Power-Open / Spring-Return or Electric Strip Heater
3. COMMON
4. OPEN / ON

FOR LIMITED WIRE INSTALLATIONS REFERENCE PAGE 10 OF THIS INSTALL GUIDE.

POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.

POWER TO EQUIPMENT 24VAC. SIZE TRANSFORMERS AS NEEDED.

OUTPUT IS 24VAC @ 1A. PROVIDE PROPERLY Sized RELAYS AS NEEDED.

Fig. 11 – Reheat: Power-Open / Power-Closed or Floating Valve Motor

1. Transformer
2. 24VAC Reheat Power-Open / Power-Closed or Floating Valve
3. COMMON
4. OPEN
5. CLOSE

FOR LIMITED WIRE INSTALLATIONS REFERENCE PAGE 10 OF THIS INSTALL GUIDE.

POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.

POWER TO EQUIPMENT 24VAC. SIZE TRANSFORMERS AS NEEDED.

OUTPUT IS 24VAC @ 1A. PROVIDE PROPERLY Sized RELAYS AS NEEDED.
WHEN INSTALLING THIS PRODUCT...

1. Read these instructions carefully and thoroughly. Failure to follow these instructions or a result of improper installation, service, adjustments, maintenance, and/or use can result in personal injury, damage to personal property, and/or cause a hazardous and dangerous situation.

2. Check the ratings and description given in the specification of the product to make sure the product is suitable for your application.

3. Installer must be trained and experienced service technician. Follow all safety codes and regulations and all local and state building codes. Read instructions thoroughly and follow any warnings or notes.

4. After installation is complete, check product operation as provided in these instructions.

⚠️ CAUTION

1. Disconnect power supply before connecting any wiring to device to prevent electrical shock or damage to equipment.
2. This guide is designed for certified, trained, and experienced service technicians. Failure to follow installation instructions does not alleviate installer responsibility to protect the equipment, the property, and the device it is being connected too. If at anytime if there is concern or confusion about how to install this device, immediately stop what you are doing and either contact Pelican Wireless Systems or a certified Pelican Wireless Systems distributor.

⚠️ WARNING

1. This equipment is designed to communicate over radio frequency to other Pelican equipment only. If this equipment is not installed and used in accordance with the instruction manual, you may experience wireless interference. This device has been tested and complies with FCC rules and regulations.

LOCATION AND MOUNTING

Location

In this configuration, there are two devices that need to be mounted. The Remote Thermostat (RT1) in the conditioned space and the damper controller (TCM1) at the damper actuator.

Choose a location for the Pelican remote thermostat (RT1) where the space temperature being detected is most accurate for conditioning that zone. The remote thermostat communicates wirelessly to the damper controller (TCM1).

Choose a location for the TCM1 that is not exposed to weather, and where connections are easily accessible. The TCM1’s antenna must NOT be blocked by metal (ref. Page 18, Fig. 13.2). The TCM1’s antenna is designed to route and repeat the Pelican wireless mesh network.
Fig. 12.1 – Pelican 24 VAC damper actuator controller (TCM1)

Thermostat Control Module

Serial No: XXX-XXXX
Model No: TCM1
Contains FDC ID: DA2MRF24AJ4H3MA
Power: 24VAC


NOTE: Switch Position should be set to (1) Conventional

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<td>24VAC Damper Power Close</td>
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<tr>
<td>W</td>
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<td>W2</td>
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</tr>
<tr>
<td>W</td>
<td>24VAC Heat Damper Power Open</td>
</tr>
<tr>
<td>W2</td>
<td>24VAC Heat Damper Power Close</td>
</tr>
</tbody>
</table>
Fig. 13.1 – Pelican TCM1 Mounting

Mounting

The TCM1 is mounted on a clean, dry, flat surface with double sided tape. Make sure surface has been cleaned of all dust before applying tape.

Fig. 13.2 – TCM1 Mounting on Flat Surfaces

Internal Antenna location. Do not block by metal.

Flat Surface Mounting

Mount on a flat surface clear from metal obstructions.

Duct Mounting

Damper Actuator
TCM1’s wireless antenna needs to be placed where it will not be blocked by metal (ref. Page 18, Fig. 13.2).

RT1-AC: Powered by 24VAC installed in the conditioned space

RT1-DC: Powered by 2 AA batteries installed in the conditioned space

TCM1 to RT1 Communication Diagram

Fig. 14.3 – TCM1 to RT1 Communication Diagram
1. Clean surface TCM1 will be mounted on.

2. Apply strip of double sided tape to back of TCM1. Stick the TCM1 to clean flat surface with being sure that TCM1 antenna is NOT blocked by metal.

3. TCM1 wiring and hookup diagrams are shown in the TCM1 Operation and Application section as follows:
   a. Page 21 - Fig. 15 Single Duct: Power-Open / Spring-Return Damper Actuator
   b. Page 21 - Fig. 16 Single Duct: Power-Closed / Spring-Return Damper Actuator
   c. Page 22 - Fig. 17 Single Duct: Power-Open / Power- Closed or Floating Damper Actuator
   d. Page 22 - Fig. 18 Dual Duct: Power-Open / Spring-Return Damper Actuators
   e. Page 23 - Fig. 19 Dual Duct: Power-Closed / Spring-Return Damper Actuators
   f. Page 23 - Fig. 20 Dual Duct: Power-Open / Power-Closed or Floating Damper Actuators
   g. Page 24 - Fig. 21 Reheat: ON/OFF Electric or Power-Open / Spring-Return Valve Motor
   h. Page 24 - Fig. 22 Reheat: Power-Open / Power-Closed or Floating Valve Motor

4. Install RT1 thermostat in conditioned space following the instructions provided with RT1 thermostat.

5. Go to Pelican Web App and configure the RT1 to communicate with its TCM1.

⚠️ WARNING
The following TCM1 wiring diagrams are to be used as reference to the most common application where a Pelican TCM1 will be installed to control specific damper actuators. For dual ducted applications, a single Pelican TCM1 will control both the hot and cold damper actuators for the zone. In the case the system you are connecting the Pelican TCM1to is not defined in this installation guide. Contact Pelican Technical Support for assistance at 888-512-0490 or email support@pelicanwireless.com.
Fig. 15 – Single Duct: Power-Open / Spring-Return Damper Actuator

POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.

POWER TO EQUIPMENT 24VAC. SIZE TRANSFORMERS AS NEEDED.

OUTPUT IS 24VAC @ 1A. PROVIDE PROPERLY SIZED RELAYS AS NEEDED.

Fig. 16 – Single Duct: Power-Closed / Spring-Return Damper Actuator

POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.

POWER TO EQUIPMENT 24VAC. SIZE TRANSFORMERS AS NEEDED.

OUTPUT IS 24VAC @ 1A. PROVIDE PROPERLY SIZED RELAYS AS NEEDED.
Fig. 17 – Single Duct: Power-Open / Power-Closed or Floating Damper Actuator

1. POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.
2. POWER TO EQUIPMENT 24VAC. SIZE TRANSFORMERS AS NEEDED.
3. OUTPUT IS 24VAC @ 1A. PROVIDE PROPERLY SIZED RELAYS AS NEEDED.

Fig. 18 – Dual Duct: Power-Open / Spring-Return Damper Actuators

1. POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.
2. POWER TO EQUIPMENT 24VAC. SIZE TRANSFORMERS AS NEEDED.
3. OUTPUT IS 24VAC @ 1A. PROVIDE PROPERLY SIZED RELAYS AS NEEDED.
Fig. 19 – Dual Duct: Power-Closed / Spring-Return Damper Actuators

1. POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.
2. POWER TO EQUIPMENT 24VAC. SIZE TRANSFORMERS AS NEEDED.
3. OUTPUT IS 24VAC @ 1A. PROVIDE PROPERLY SIZED RELAYS AS NEEDED.

Fig. 20 – Dual Duct: Power-Open / Power-Closed or Floating Damper Actuators

1. POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.
2. POWER TO EQUIPMENT 24VAC. SIZE TRANSFORMERS AS NEEDED.
3. OUTPUT IS 24VAC @ 1A. PROVIDE PROPERLY SIZED RELAYS AS NEEDED.
Fig. 21 – Reheat: ON/OFF Electric or Power-Open / Spring-Return Valve Motor

1. POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.
2. POWER TO EQUIPMENT 24VAC. SIZE TRANSFORMERS AS NEEDED.
3. OUTPUT IS 24VAC @ 1A. PROVIDE PROPERLY SIZED RELAYS AS NEEDED.

Fig. 22 – Reheat: Power-Open / Power-Closed or Floating Valve Motor

1. POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.
2. POWER TO EQUIPMENT 24VAC. SIZE TRANSFORMERS AS NEEDED.
3. OUTPUT IS 24VAC @ 1A. PROVIDE PROPERLY SIZED RELAYS AS NEEDED.
To configure a new Pelican Zone Thermostat or Damper Controller, navigate to your Pelican Web App using any web browser (Google Chrome, Apple Safari, Microsoft Edge, etc.). All configuration is done through the Pelican Web App. If you do not already have a Pelican Web App, you will need to install a Pelican Gateway (GW400) at the same location. For further information on the Pelican Gateway (GW400) visit www.PelicanWireless.com.

Each Pelican Thermostat has a unique identification serial number. This serial number is found on the bottom and behind the front cover of a Thermostat or on the front of the TCM1. With the Serial Number(s) recorded, log onto your Pelican Web App to find new notification(s) matching the zone(s) serial number(s). Press configure next to the device you are configuring.

If no new notifications are found, select ‘Admin’ and identify if the new Thermostat or TCM1 is found on your Pelican Web App. If are are unable to find the Thermostat or TCM1 under Admin, then the Thermostat or TCM1 is unable to communicate with the wireless gateway. Go to Page 22 for Troubleshooting.

The following flow chart illustrates Thermostat and TCM1 configuration options.

- **GENERAL SETTINGS**
  - **NAME**
  - **GROUP**
  - **DESCRIPTION**

- **SYSTEM TYPE**
  - **SINGLE DUCT DAMPER**
  - **DUAL DUCT DAMPER**

- **ZONE CONTROLLER**
  - Select the Z8 or Z24 controlling the RTU or Air Handler that supplies conditioned air to this zone.

- **CYCLES PER HOUR**
  - 1 2 3 [4] 5 6

- **ANTICIPATION DEGREES**
  - 0.0 [0.1] 0.2 0.3 0.4 0.5

- **FAN CIRCULATION MINUTES**
  - [MINUTES PER HOUR]

- **SYSTEM TYPE**
  - Select [Single Duct Damper] if there is one damper for both cooling and heating. Select [Dual Duct Damper] if there are two separate dampers; one for heating and the other for cooling.

- **ZONE CONTROLLER**
  - [DROP DOWN SELECTION]

- **HEAT ZONE CONTROLLER**
  - [DROP DOWN SELECTION]

- **GENERAL SETTINGS**
  - Name the Thermostat or TCM1 to identify which zone it is installed in and controlling. It is recommended that the name be the actual space name the device is installed in. Use the Group field to associate thermostats together for easier management. The description field is an optional field for identifying unique aspects of the zone (e.g. zone number, model number of the actuator, damper or duct size, etc.).

- **ZONE CONTROLLER**
  - Select the Z8 or Z24 controlling the Cold Deck RTU or Air Handler.

- **HEAT ZONE CONTROLLER**
  - Select the Z8 or Z24 controlling the Hot Deck RTU or Air Handler.

- **CYCLES PER HOUR**
  - This sets a target cycles per hour for this zone. Selecting a larger number means the zone will target more cycles per hour to maintain space temperature, but each cycle will be for a shorter period of time. Selecting a smaller number means the zone will target fewer cycles per hour to maintain space temperature, but each cycle will be for a longer period of time. Default is [4] cycles per hour.

- **ANTICIPATION DEGREES**
  - This sets how many degrees away from setpoint the zone should stop requesting conditioned air, allowing for supplemental air to continue to drive its space temperature up or down. Default is [0.1] anticipation degrees.

- **FAN CIRCULATION MINUTES**
  - This sets a minimum required fan/ventilation minutes/run-time for each hour for this zone. This setting guarantees that the zone will demand fan/ventilation for a specific amount of timer per hour. If this input is used, the Thermostat’s schedule will allow for this fan run-time setting to only be active during Occupied periods, if desired.
4 DAMPER CONFIGURATION OPTIONS

The following flow chart illustrates Thermostat and TCM1 damper configuration options.

DAMPER TYPE

- NONE
- OPEN/CLOSE
- FLOATING

ACTUATOR TRAVEL TIME
Set how many seconds the actuator takes to move from fully closed to fully open. Recommend to time the actuator after installed.

MINIMUM DAMPER POSITION
Set the damper percentage for ventilation or reheat cycles.

MAXIMUM DAMPER POSITION
Set the maximum damper position for central cooling or heating cycles.

DAMPER TYPE

- NONE = No Damper
- OPEN/CLOSE = 24VAC Power-Open/Spring-Return, Power-Closed/Spring-Return, or 24VAC Power-Open/Power-Closed Damper
- FLOATING = 24VAC Floating Damper Actuator

REHEAT TYPE

- NONE = No Reheat
- OPEN/CLOSE = 24VAC Power-Open/Spring-Return, Power-Closed/Spring-Return, or 24VAC Power-Open/Power-Closed Damper
- FLOATING = 24VAC Floating Damper Actuator
- ELECTRIC = Electric Reheat Coil

REHEAT TYPE

- NONE
- OPEN/CLOSE
- FLOATING
- ELECTRIC

ACTUATOR TRAVEL TIME (SECONDS)
Set how many seconds the actuator takes to move from fully closed to fully open. Recommend to time the actuator after installed.

MAXIMUM REHEAT POSITION
Set the maximum reheat valve position.

MOTOR TRAVEL TIME
Set how many seconds the motor takes to move from fully closed to fully open. Recommend to time the motor after installation.

MAXIMUM REHEAT POSITION
Set the maximum reheat valve position.

5 THERMOSTAT SETTINGS

The following flow chart illustrates Thermostat configuration options.

TEMP DISPLAY

- FAHRENHEIT [°F]
- CELSIUS [°C]

HEAT RANGE
Setable range -9°F to 99°F. This setting limits how far the heat set-point can be adjusted. The important setting is the [HIGHEST HEAT SET-POINT] since this restricts how high the heating temperature set-point can be set too.

COOL RANGE
Setable range -9°F to 99°F. This setting limits how far the cool set-point can be adjusted. The important setting is the [LOWEST COOL SET-POINT] since this restricts how low the cooling temperature set-point can be set too.

SAME RANGE
Setable range 0°F to 10°F. If the thermostat ever detects the space temp to go beyond this range, an automated alarm will be generated. A safe range should only be set for zones that require immediate action upon high or low temperature detection.

NOTIFICATION SETTINGS

The following flow chart illustrates notification configuration options.

NOTIFICATION SENSITIVITY

- OFF
- LOW
- MEDIUM
- HIGH
- CUSTOM

SETPOINT DEVIATION
Setable range 0°F to 10°F. This sets how far the temperature in the zone/space must be from the temperature set-point, during an active call for heating or cooling, for at least one hour, before an alarm will be generated.

NOTIFY IF UNREACHABLE
Set to NO if you do not want to be notified if the thermostat becomes unreachable. Set to YES if you want to be notified if the thermostat becomes unreachable.

SAFE RANGE
Setable range 0°F to 100°F. If the thermostat ever detects the space temp to go beyond this range, an automated alarm will be generated. A safe range should only be set for zones that require immediate action upon high or low temperature detection.
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