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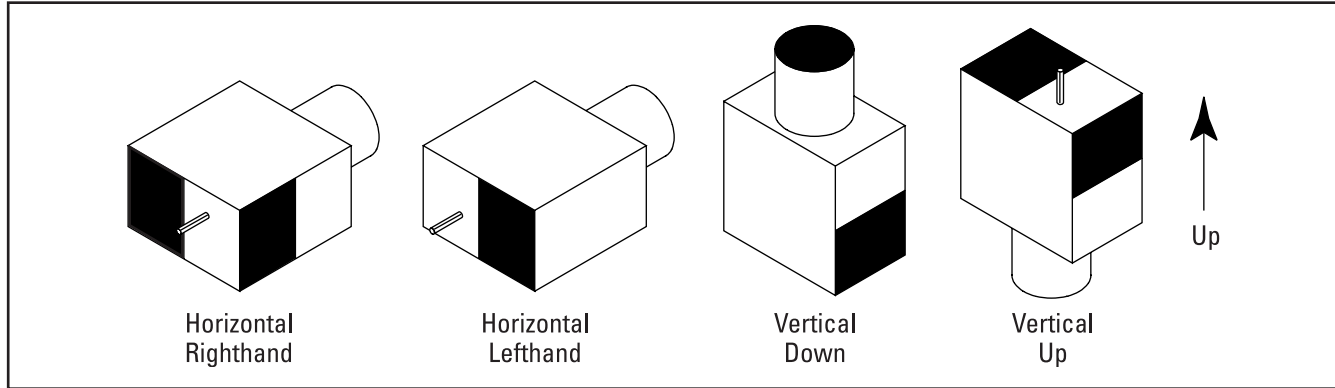
LGB
LOW PRESSURE BY-PASS UNITS
SERVICE & INSTALLATION MANUAL

Date: 06/10
Reference #: F-67

www.price-hvac.com

Installation

1. LGB unit can be installed as shown:

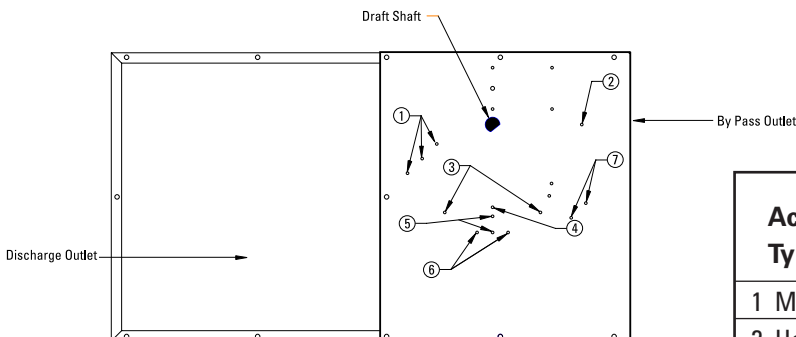


- LGB units should be level to within 1" (25mm) from side to side.
- A minimum clearance between wall and casing of 1½ inlet duct diameters should be maintained on by-pass side of box.
- For installation of the Honeywell ML-6161B2024B electric actuator supplied as standard from E.H. Price, refer to drawing on page 3. A mounting hole layout is located on the motor mounting panel, for most popular makes and models of electric actuators. Those included are as follows:
Belimo: LM24, NM24, KM24
Landis & Staefa: EA349 Series
Kreuter: MEP-5000 Series
Johnson Controls: EDA2040 Series
- For installation of the Kreuter MCP3631 pneumatic actuator supplied as standard from E.H. Price, refer to drawing on page 4.
- Refer to the following control package drawings for the wiring diagrams, parts lists and sequence of operation:
EC (Cooling): Page 5
EC1 (Cooling /w reheat): Page 6
EHC (Heating / Cooling): Page 7
EHC1 (Heating / Cooling with reheat): Page 8
For mounting of temperature sensor, refer to drawing on page 9.
- For balancing procedure, refer to drawing on page 9.

Maintenance

LGB is designed for zero maintenance. No oil or grease should be placed on tracks: they are designed to run dry; adding lubricants will add friction and collect dirt.

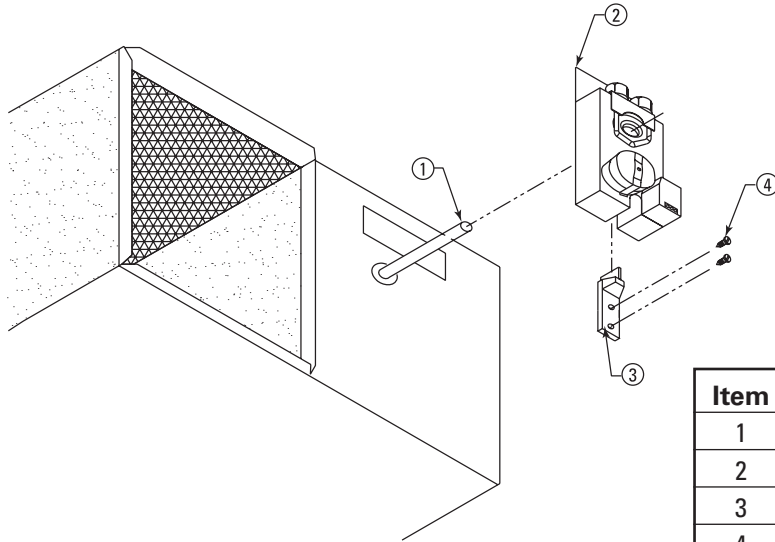
Field Mounted Actuator



Actuator Type	Gate Position	Number of Holes
1 Min. CFM Stop	-	-
2 Honeywell-ML6161	100%	1
Landis & GYR EA349	100%	1
3 Belimo-NM24	100%	2
4 Johnson EDA2040	100%	1
5 Belimo-LM24	100%	2
6 Kreuter-MEP-5001	100%	2
7 Kreuter-MCP 3631	100%	2

Electric Actuator Mounting Detail

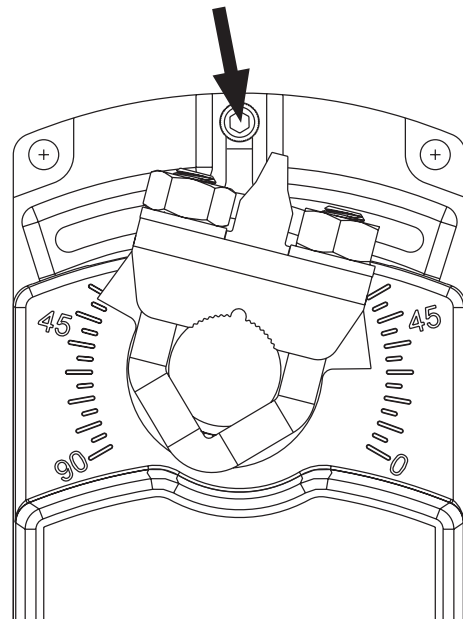
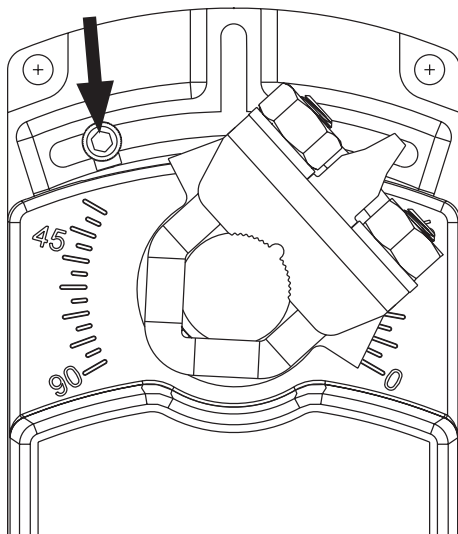
KMC MEP-4003 Series



Item	Qty	Description
1	1	LGB Shaft
2	1	KMC Actuator MEP 4003 Series
3	1	Non-Rotation Bracket (provided w/Actuator)
4	2	Self-Tapping Screw

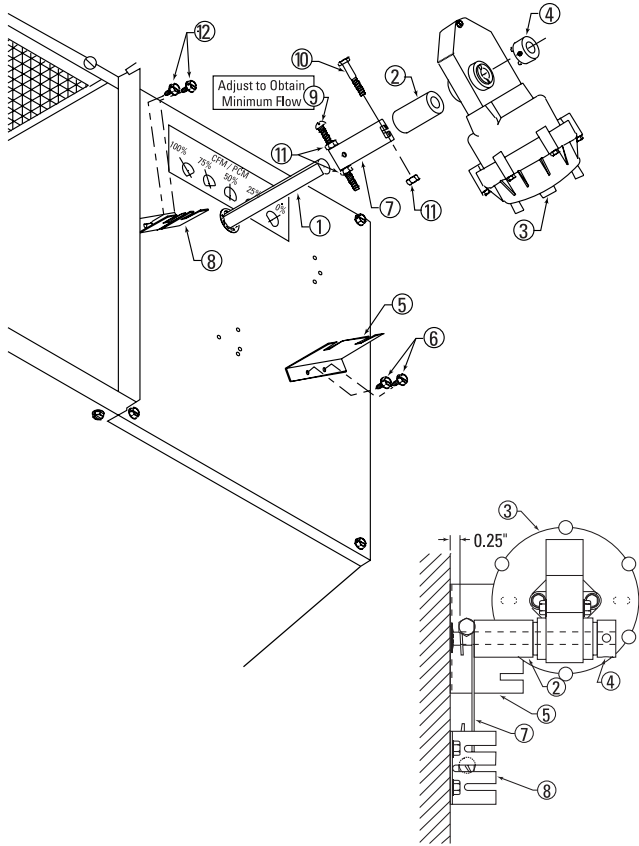
Minimum Airflow Calibration Procedure

1. Closing rotation is in the clockwise (CW) direction
 2. With power to the controls disconnected, move the actuator to the full counterclockwise (CCW) position manually using the actuator clutch.
 3. Determine the angle of minimum position required for the application
 4. Loosen set screw and move to desired minimum position.
 5. Rotate the actuator manually to minimum position using the clutch.
 6. With the actuator at minimum position, adjust the position more accurately using airflow measurements.
- Alternatively, minimum positions can be set in software using the Price USB Linker.



Pneumatic Actuator and MFS Kit Installation Details

Kreuter Rotary MCP3631 Series

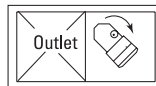


Item	Qty	Description
1	1	Shaft
2	1	PVC Spacer 0.5" ID x 1.688" Long
3	1	Pneumatic Actuator MCP3631-XXXX KRT
4	1	Drive Bushing HLO-1006
5	1	Actuator Clip
6	2	SMS #10 x 0.5 A HSWH PL
MFS Kit		
7	1	Minimum Flow Lever
8	1	Stop Bracket (not required on LGB 6 & 8)
9	1	MS .25 - 20 x 4.0 SL RD PL
10	1	CS .25 - 20 x 1.25 HX PL
11	3	Nut .25 - 20 NC HEX PL
12	2	SMS #10 x 0.5 A HSWH PL

Direct Acting (See details left for reverse acting)



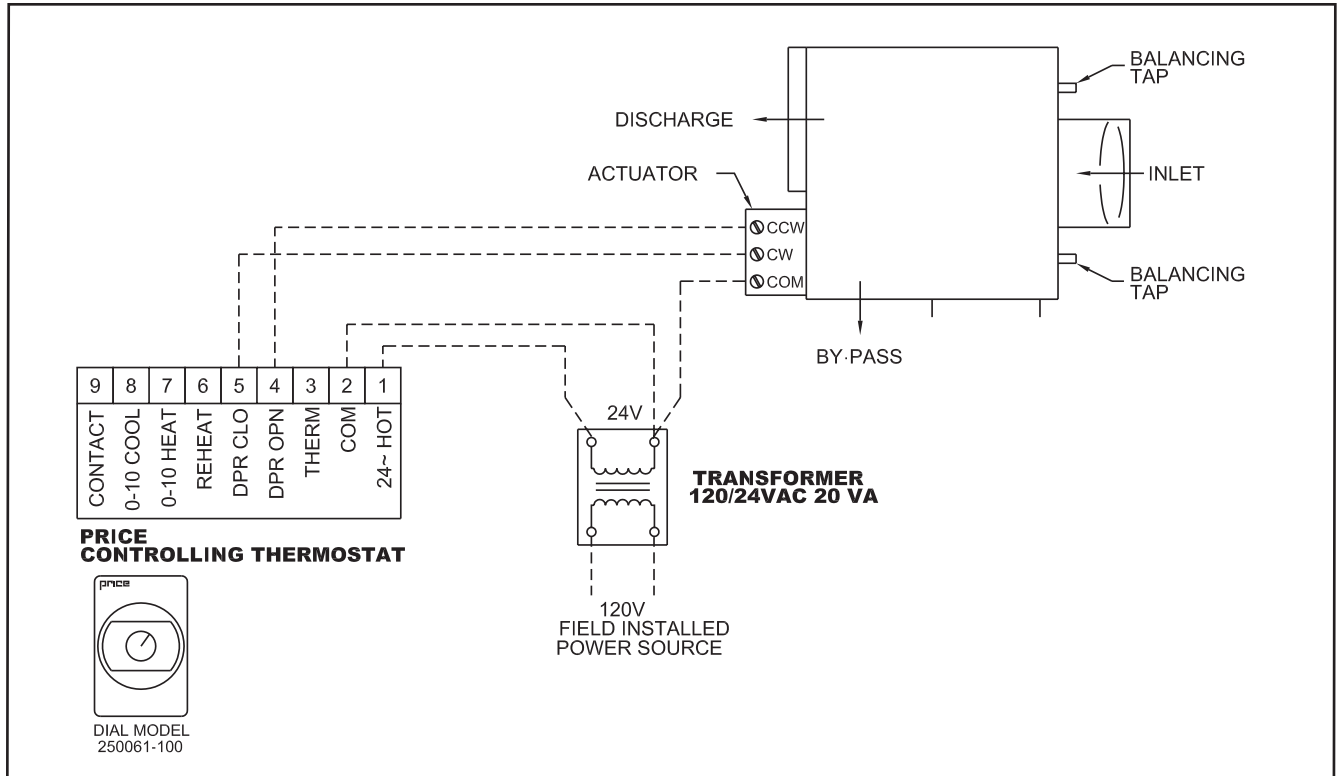
Direct Acting



Reverse Acting

Control Sequence 2500

Cooling Only (EC Package)



Control Sequence 2500

Control Sequence 2500 is a direct acting arrangement for cooling applications.

Components

24 volt reversible actuator for factory or field mounting directly to the damper shaft and includes adjustable end stops.

24 volt modulating digital thermostat for field mounting. The setpoint range can be adjusted with a Price USB LINKER setup as well.

115 to 24 volt 20VA transformer c/w all necessary field mounting hardware.

Sequence of Control

1. On a rise in room temperature, the thermostat energizes the actuator. The actuator slowly rotates the damper shaft \curvearrowright to increase the cold air to the room.
2. On a fall in room temperature, the thermostat reverses the above action. The actuator slowly rotates the damper shaft \curvearrowleft to decrease cold air to the room.

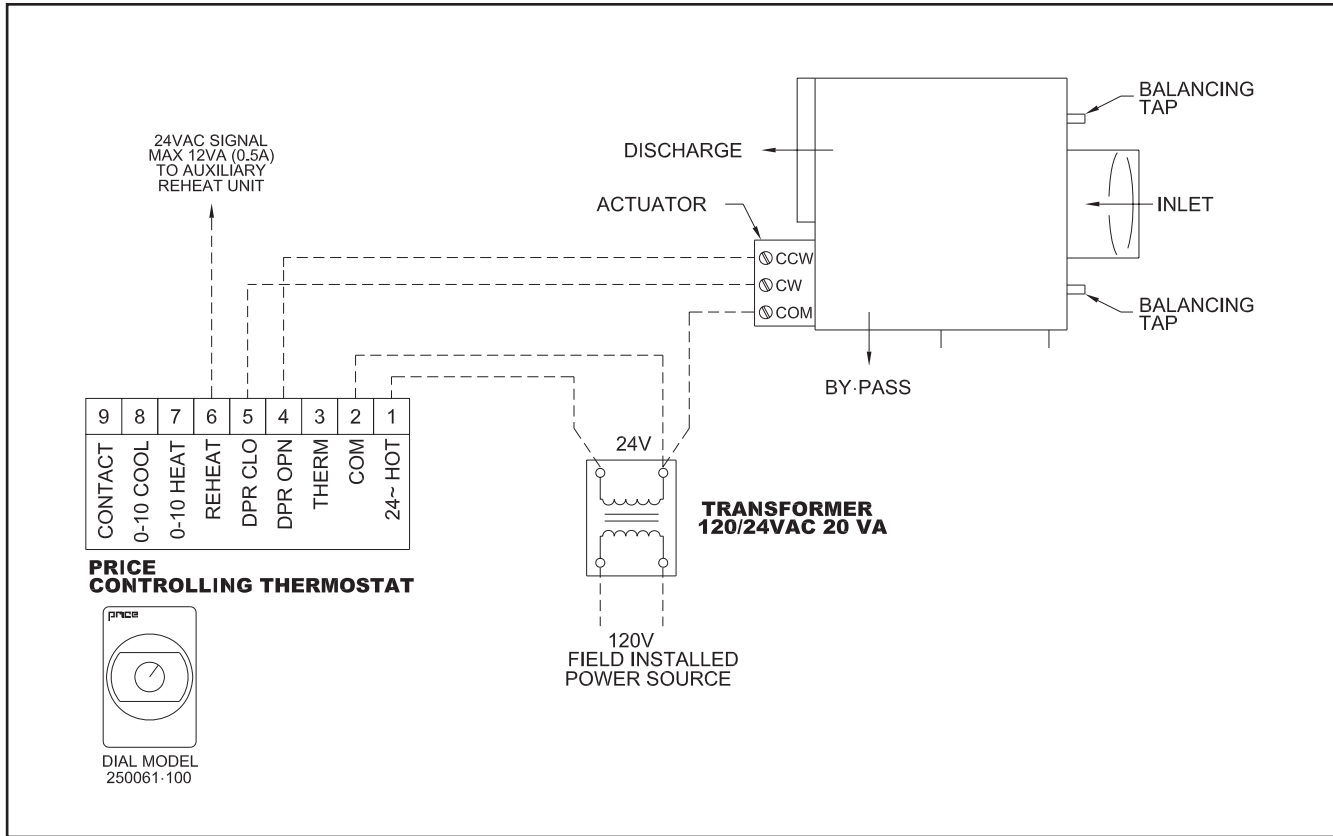
General

1. The thermostat used in the C control package has a modulating control algorithm: as the room temperature approaches the desired set point, it will energize the actuator with shorter on times and longer off times to prevent overshoot of the set point.

Control Sequence 2501

Cooling with Reheat or Perimeter Heating

(EC1 Package)



Control Sequence 2501

Control Sequence 2501 is a direct acting arrangement for cooling applications with 1 stage of reheat or perimeter heating.

Components

24 volt reversible actuator for factory or field mounting directly to the damper shaft and includes adjustable end stop.

24 volt modulating electronic thermostat for field mounting. The setpoint range can be adjusted with a Price USB LINKER setup as well.

115 to 24 volt 20VA transformer c/w all necessary field mounting hardware.

Important: When an electric duct reheat coil is installed, the minimum air volume must be field set to maintain or exceed the minimum required face velocity, as indicated on the electric reheat coil nameplate and any pressure differential or airflow switch that is being used. Use the adjustable end stop on the actuator.

Sequence of Control

1. On a rise in room temperature, the thermostat energizes the actuator. The actuator slowly rotates the damper shaft ↻ to increase the flow of cold air to the room.
2. On a fall in room temperature, the thermostat reverses the above action. The actuator slowly rotates the damper shaft ↻ to decrease flow of cold air to the room.
3. If the room temperature continues to fall, the thermostat activates the control relay of the reheat coil or the perimeter heating.

General

1. The thermostat used in the control package has a modulating control algorithm: as the room temperature approaches the desired set point, it will energize the actuator with shorter on times and longer off times to prevent overshoot of the set point.

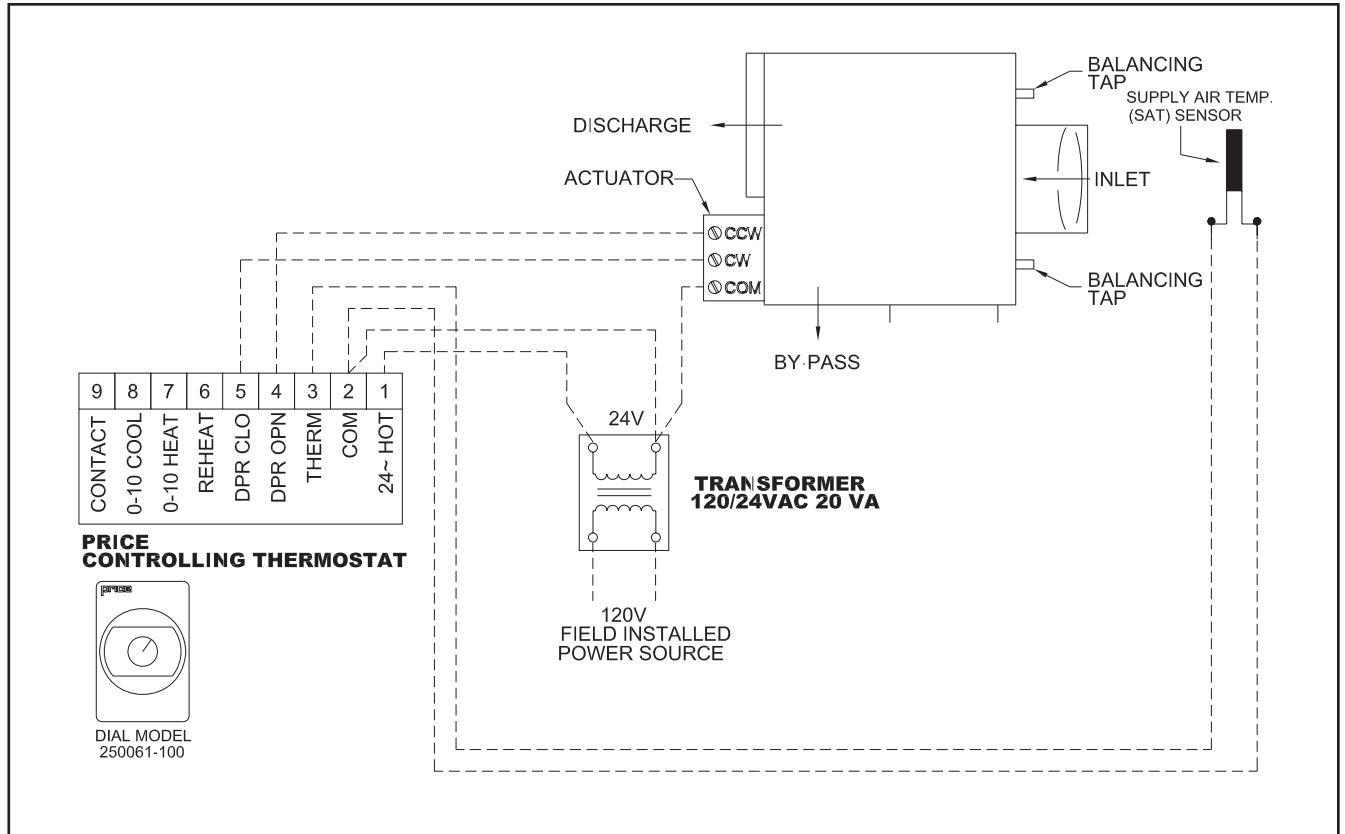
Notes

1. When the auxiliary heating unit is equipped with a built-in 24 volt transformer, use the appropriate wiring diagram.
2. All heating relays, water control valves or magnetic contactors used with control package EC1 must have a maximum total coil rating of 12 VA.

Control Sequence 2502

Heating / Cooling with Automatic Change Over

(EHC Package)



Control Sequence 2502

Control Sequence 2502 is a direct acting arrangement for heating / cooling applications with automatic change over.

Components

24 volt reversible actuator for factory or field mounting directly to the damper shaft and includes adjustable end stops.

24 volt modulating electronic thermostat c/w change over sensor for field mounting. The setpoint range can be adjusted with a Price USB LINKER setup as well.

115 to 24 volt 20VA transformer c/w all necessary field mounting hardware.

Sequence of Control

A. Cooling Mode – Cool air supplied in duct system.

1. The change over thermistor senses cool air in the LGB unit and signals the room thermostat to control the cold air supply.
2. On a rise in room temperature, the thermostat energizes the actuator. The actuator slowly rotates the damper shaft ⤴ to increase the cold air to the room.

3. On a fall in room temperature, the thermostat reverses the above action. The actuator slowly rotates the damper shaft ⤵ to decrease cold air to the room.

B. Heating Mode – Warm air supplied in duct system.

1. The change over thermistor senses warm air in the LGB unit and signals the room thermostat to control the heating air supply.
2. On a rise in room temperature, the thermostat energizes the actuator. The actuator slowly rotates the damper shaft ⤴ to decrease the heating air to the room.
3. On a fall in room temperature, the thermostat reverses the above action. The actuator slowly rotates the damper shaft ⤵ to increase heating air to the room.

General

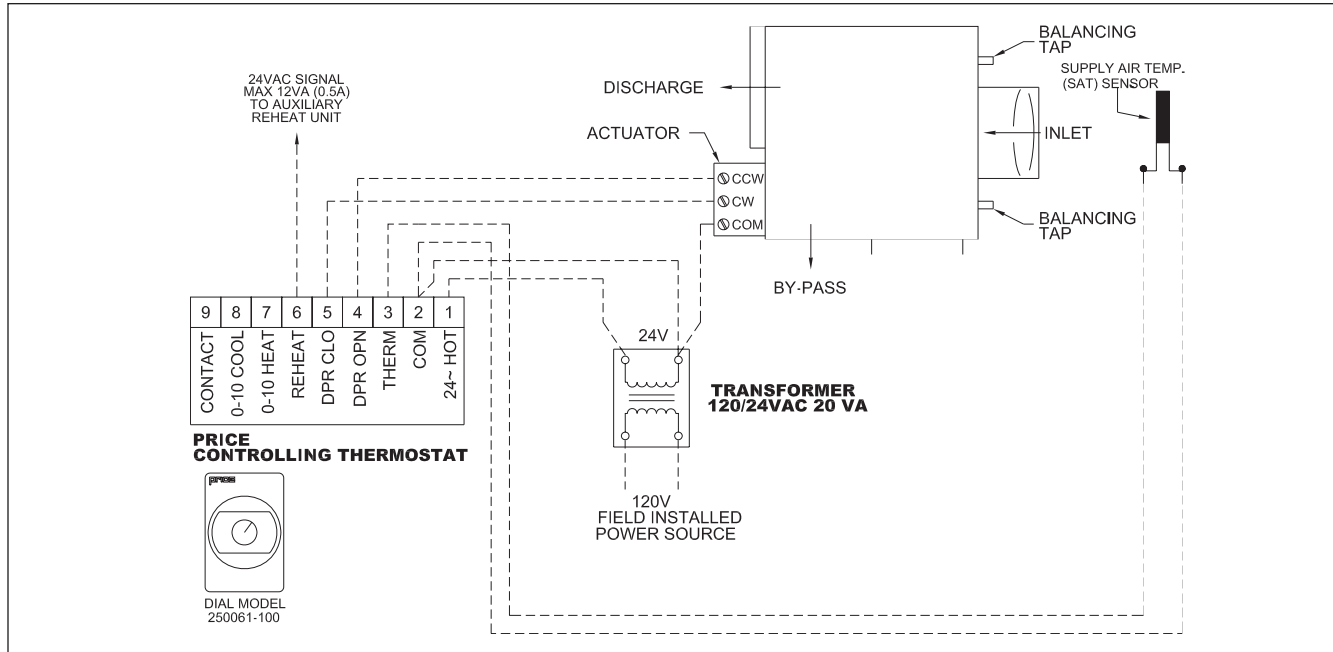
1. The thermostat used in the control package has a modulating control algorithm: as the room temperature approaches the desired set point, it will energize the actuator with shorter on times and longer off times to prevent overshoot of the set point.

Notes

1. The heating/cooling change over thermistor uses a dynamic heat/cool changeover algorithm.

Control Sequence 2503

Heating / Cooling with Automatic Change Over and Reheat or Perimeter Heating (EHC1 Package)



Control Sequence 2503

Control Package 2503 is a direct acting arrangement for heating / cooling applications with automatic change over and 1 stage of reheat or perimeter heating.

Components

24 volt reversible actuator for factory or field mounting directly to the damper shaft and includes adjustable end stops.

24 volt modulating electronic thermostat c/w change over sensor for field mounting. The setpoint range can be adjusted with a Price USB LINKER setup as well.

115 to 24 volt 20VA transformer c/w all necessary field mounting hardware.

Important: When an electric duct reheat coil is installed, the minimum air volume must be field set to maintain or exceed the minimum required face velocity, as indicated on the electric reheat coil nameplate and any pressure differential or airflow switch that is being used. Use the adjustable end stop on the actuator.

Sequence of Control

- A. Cooling Mode – Cool air supplied in duct system.
1. The change over thermistor senses cool air in the LGB unit and signals the room thermostat to control the cold air supply.
 2. On a rise in room temperature, the thermostat energizes the actuator. The actuator slowly rotates the damper shaft ⤴ to increase the flow of cold air to the room.

3. On a fall in room temperature, the thermostat reverses the above action. The actuator slowly rotates the damper shaft ⤵ to decrease flow of cold air to the room.

4. If the room temperature continues to fall, the thermostat activates the control relay of the reheat coil or the perimeter heating.

B. Heating Mode – Warm air supplied in duct system.

1. The change over thermistor senses warm air in the LGB unit and signals the room thermostat to control the heating air supply.
2. On a rise in room temperature, the thermostat energizes the actuator. The actuator slowly rotates the damper shaft ⤴ to decrease the flow of heating air to the room.

3. On a fall in room temperature, the thermostat reverses the above action. The actuator slowly rotates the damper shaft ⤵ to increase flow of heating air to the room.

4. If the room temperature continues to fall, the thermostat activates, as the case may be, the control relay of the reheat coil or the perimeter heating.

General

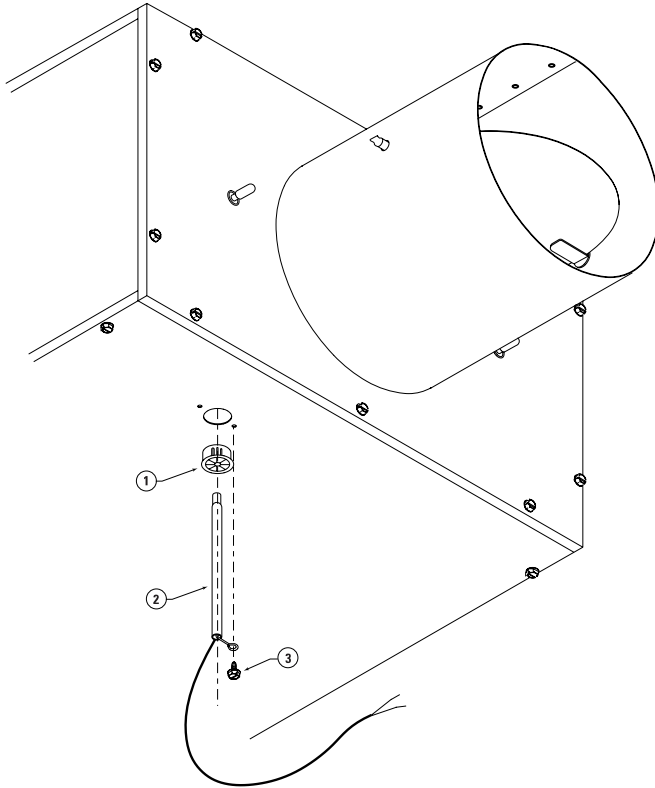
1. The thermostat used in the control package has a modulating control algorithm: as the room temperature approaches the desired set point, it will energize the actuator with shorter on times and longer off times to prevent overshoot of the set point.

Notes

1. The heating/cooling change over thermistor uses a dynamic heat/cool changeover algorithm.

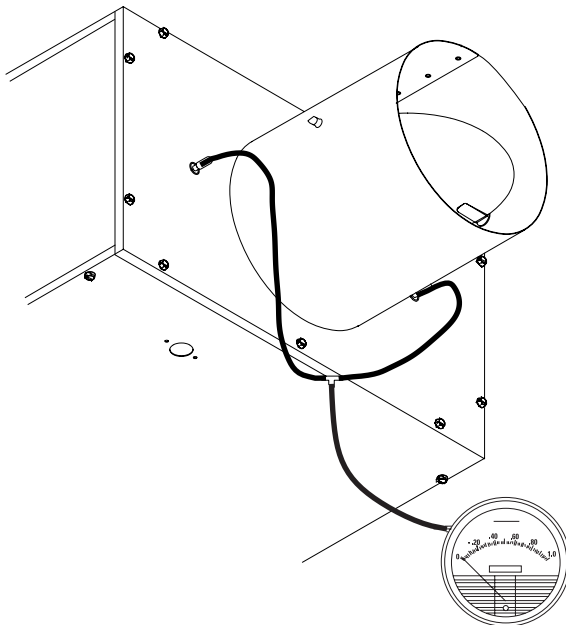
Temperature Sensor

Installation Detail



Item	Qty	Description
1	1	Universal Bushing
2	1	Temperature Sensor
3	1	SMS #10 x .5 A HSWH PL

Balancing Procedure



1. Open the dampers of all supply outlets on the discharge duct from the terminal unit.
2. Adjust the room thermostat so that 100% of the air from the terminal unit is delivered to the room.
3. Adjust the inlet damper of the terminal unit to provide the required total amount of air.
4. Starting with the outlet the furthest away, adjust the damper of each air outlet to the required air volumes.
5. Take a static pressure reading using the dual pressure taps on the inlet panel (to obtain an average reading, link the two pressure taps together using two equal lengths of tubing connected by a "T").
6. Adjust the room thermostat to provide 100% by-pass air flow (or the minimum air volume to the room, if required).
7. Position the by-pass sliding damper so that the static pressure reading obtained in step 5 remains unchanged.
8. Readjust the room thermostat to its operating set point.



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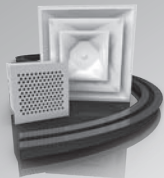
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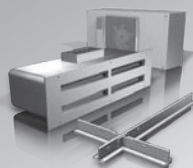
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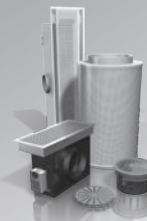
Critical Environments



Terminals



Sustainable Building



Noise Control

