

Sequence of Operation -- Variable Volume Heat/cool changeover OR cooling only - Pressure Independent

On power up the damper will calibrate closed for 2 minutes.
 If no SAT sensor is present, controller assumes Cool supply air at all times

Cool supply air: On an increase in space temperature the controller regulates the actuator to open the VAV damper and increase the flow of cool air. On an increase of space temperature greater than the cooling proportional band, the airflow is maintained at its pre-selected maximum flow setting.

On a decrease in space temperature the controller regulates the actuator to close the VAV damper and reduce the flow of cool air. If the space temperature decreases to less than the cooling proportional band, the airflow is maintained at the pre-selected minimum flow setting.

Warm supply air: On a decrease in space temperature the controller regulates the actuator to open the VAV damper and increase the flow of warm air. On a decrease of space temperature greater than the heating proportional band, the airflow is maintained at its pre-selected maximum flow setting.


On an increase in space temperature the controller regulates the actuator to close the VAV damper and reduce the flow of warm air. If the space temperature increases above the heating proportional band, the airflow is maintained at the pre-selected minimum flow setting.

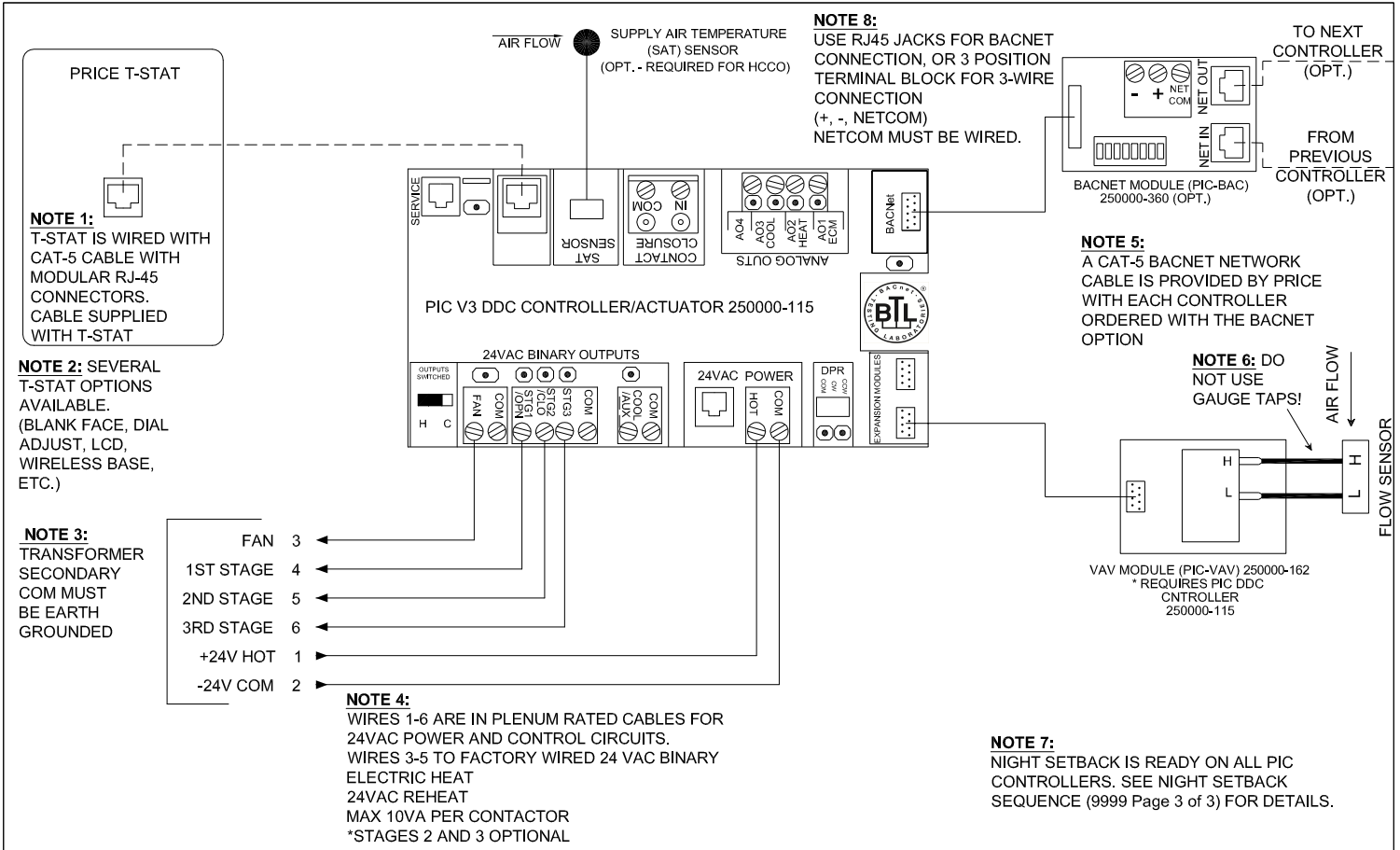
Fan Operation: On a decrease in space temperature into the heating proportional band, the unit fan will energize.

LEGEND

- FACTORY FLOW SENSOR TUBING
- FACTORY ELECTRICAL WIRING
- - - - - FIELD ELECTRICAL WIRING

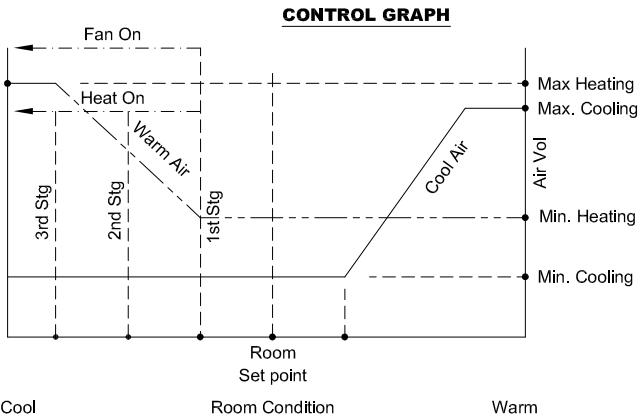
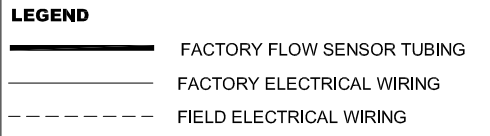
CONTROL GRAPH

PROJECT:		PRICE [®]	
ENGINEER:			
CUSTOMER:		249517	
SUBMITTAL DATE:	SPEC. SYMBOL:	2017/08/11	
		FAN POWERED VARIABLE VOLUME PARALLEL FLOW PIC - PRESSURE INDEPENDENT HEAT/COOL CHANGEOVER OR COOLING ONLY NO LOCAL REHEAT CONTROL	



Calibration note: Suitable min and max heating flows must be selected in order to maintain flow through energized electric coils of at least 200 fpm and at least 70 cfm/kW throughout the entire operating range.

Sequence of Operation -- Variable Volume Heat/cool changeover OR cooling With up to 3 stage binary reheat - Pressure Independent
On power up the damper will calibrate closed for 2 minutes.
If no SAT sensor is present, controller assumes Cool supply air at all times



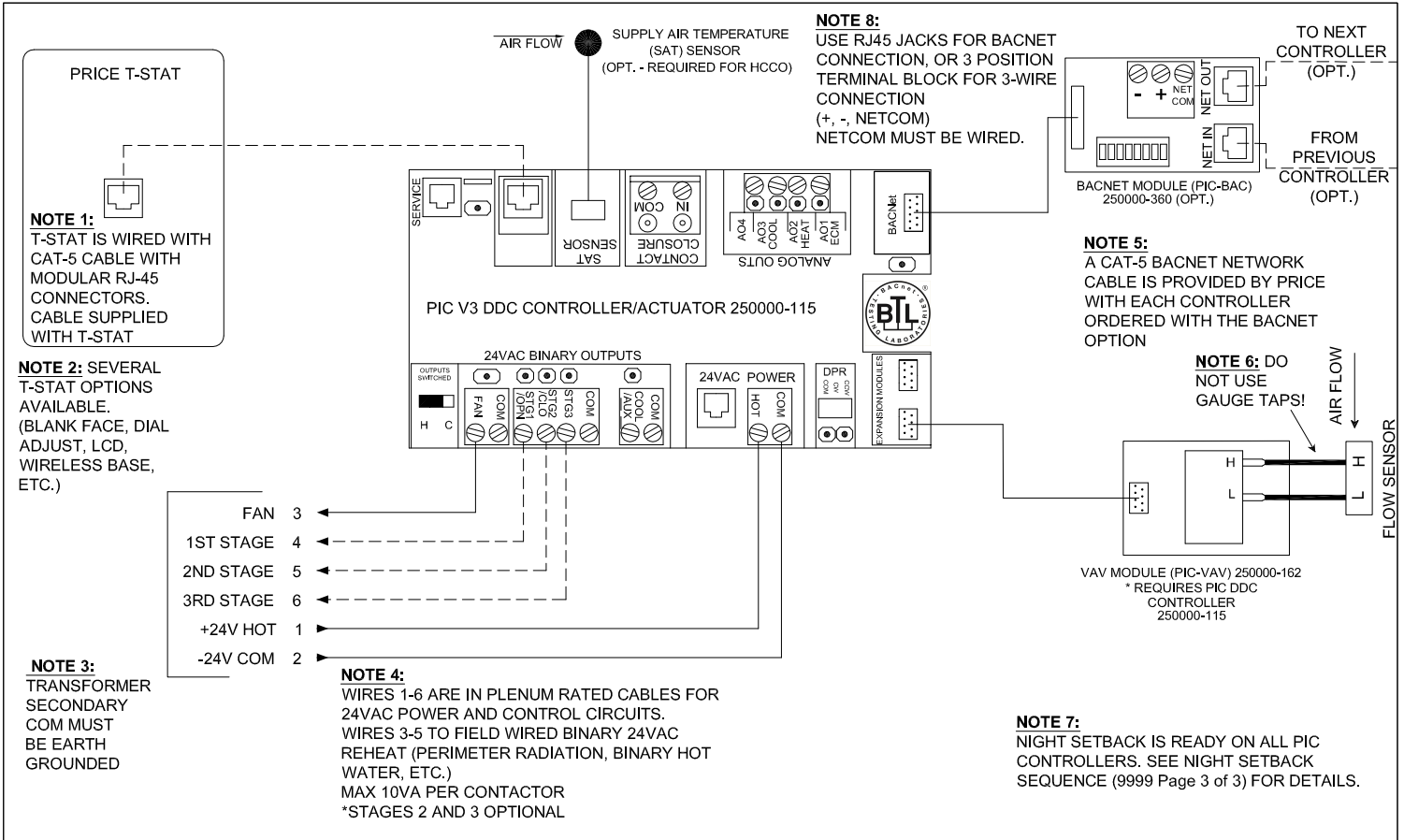
Cool supply air: On an increase in space temperature the controller regulates the actuator to open the VAV damper and increase the flow of cool air. On an increase of space temperature greater than the cooling proportional band, the airflow is maintained at its pre-selected maximum flow setting. On a decrease in space temperature the controller regulates the actuator to close the VAV damper and reduce the flow of cool air. If the space temperature decreases to less than the cooling proportional band, the airflow is maintained at its pre-selected minimum flow setting.

Warm supply air: On a decrease in space temperature the controller regulates the actuator to open the VAV damper and increase the flow of warm air. On a decrease of space temperature greater than the heating proportional band, the airflow is maintained at its pre-selected maximum flow setting. On an increase in space temperature the controller regulates the actuator to close the VAV damper and reduce the flow of warm air. If the space temperature increases above the heating proportional band, the airflow is maintained at its pre-selected minimum flow setting.

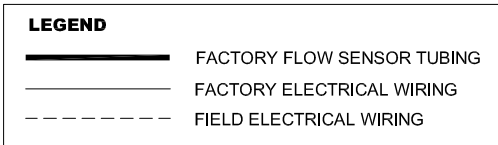
Fan Operation: On a decrease in space temperature into the heating proportional band, the unit fan will energize.

Reheat Operation: On a decrease in space temperature into the heating proportional band, the 1st stage binary 24VAC reheat output will energize. Upon further decreases, the 2nd then 3rd stages of reheat (if used) will energize.

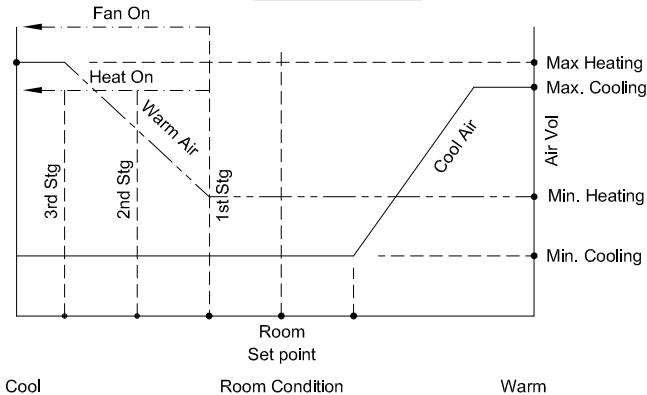
PROJECT:		PRICE [®]	
ENGINEER:			
CUSTOMER:		249518	FAN POWERED VARIABLE VOLUME PARALLEL FLOW V.V. PRESSURE INDEPENDENT HEAT/COOL C/O OR COOLING WITH UP TO 3 STG BINARY REHEAT FACTORY WIRED
SUBMITTAL DATE:	SPEC. SYMBOL:	2017/08/11	



Calibration note: Suitable min and max heating flows must be selected in order to maintain flow through energized electric coils of at least 200 fpm and at least 70 cfm/kW throughout the entire operating range.



CONTROL GRAPH



Sequence of Operation -- Variable Volume Heat/cool changeover OR cooling With up to 3 stage binary reheat - Pressure Independent

On power up the damper will calibrate closed for 2 minutes.
If no SAT sensor is present, controller assumes Cool supply air at all times

Cool supply air: On an increase in space temperature the controller regulates the actuator to open the VAV damper and increase the flow of cool air. On an increase of space temperature greater than the cooling proportional band, the airflow is maintained at its pre-selected maximum setting. On a decrease in space temperature the controller regulates the actuator to close the VAV damper and reduce the flow of cool air. If the space temperature decreases to less than the cooling proportional band, the airflow is maintained at the pre-selected minimum setting.

Warm supply air: On a decrease in space temperature the controller regulates the actuator to open the VAV damper and increase the flow of warm air. On a decrease of space temperature greater than the heating proportional band, the airflow is maintained at its pre-selected maximum setting. On an increase in space temperature the controller regulates the actuator to close the VAV damper and reduce the flow of warm air. If the space temperature increases above the heating proportional band, the airflow is maintained at the pre-selected minimum setting.

Fan Operation: On a decrease in space temperature into the heating proportional band, the unit fan will energize.

Reheat Operation: On a decrease in space temperature into the heating proportional band, the 1st stage binary 24VAC reheat output will energize. Upon further decreases, the 2nd then 3rd stages of reheat (if used) will energize.

PROJECT:

ENGINEER:

CUSTOMER:

SUBMITTAL DATE:

SPEC. SYMBOL:

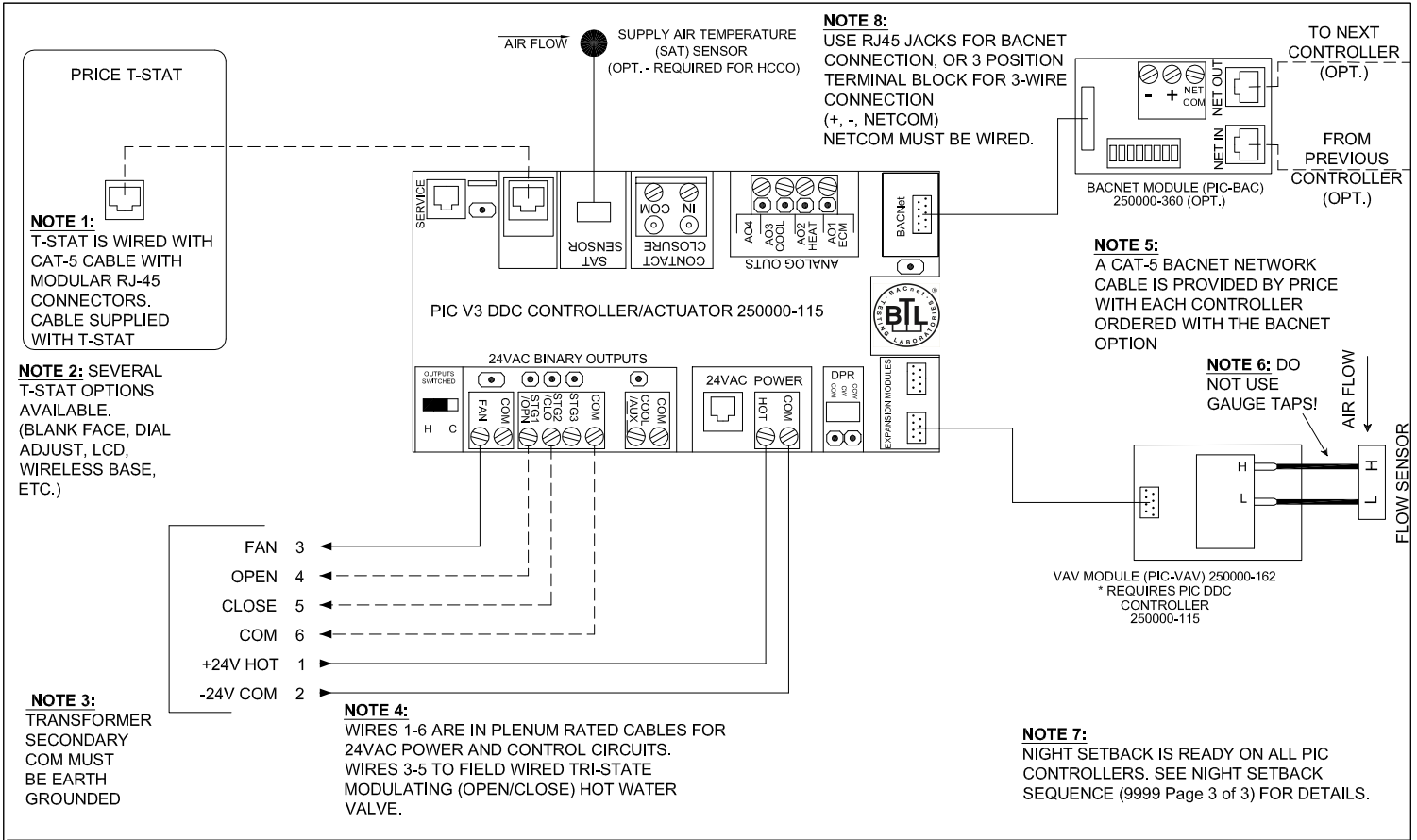
PRICE[®]

BE MB

FAN POWERED VARIABLE VOLUME PARALLEL FLOW
V.V. PRESSURE INDEPENDENT HEAT/COOL C/O OR COOLING WITH UP TO 3 STG BINARY REHEAT FIELD WIRED

249519

2017/08/11



Sequence of Operation – Variable Volume Heat/cool changeover OR Cooling With Tri-State modulating HW reheat - Pressure Independent

On power up the damper will calibrate closed for 2 minutes.
 If no SAT sensor is present, controller assumes Cool supply air at all times

Cool supply air: On an increase in space temperature the controller regulates the actuator to open the VAV damper and increase the flow of cool air. On an increase of space temperature greater than the cooling proportional band, the airflow is maintained at its pre-selected maximum setting. On a decrease in space temperature the controller regulates the actuator to close the VAV damper and reduce the flow of cool air. If the space temperature decreases to less than the cooling proportional band, the airflow is maintained at the pre-selected minimum setting.

Warm supply air: On a decrease in space temperature the controller regulates the actuator to open the VAV damper and increase the flow of warm air. On a decrease of space temperature greater than the heating proportional band, the airflow is maintained at its pre-selected maximum setting. On an increase in space temperature the controller regulates the actuator to close the VAV damper and reduce the flow of warm air. If the space temperature increases above the heating proportional band, the airflow is maintained at the pre-selected minimum setting.

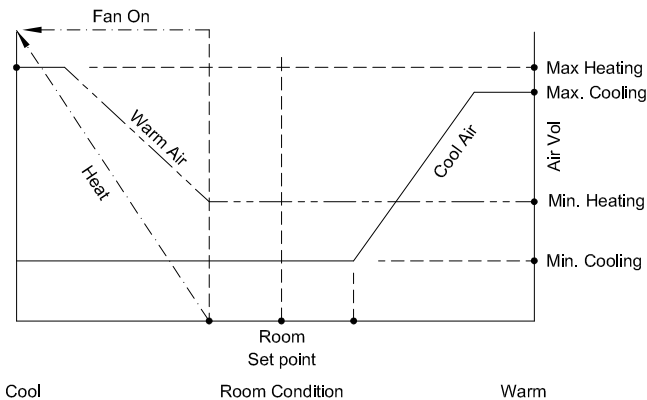
Fan Operation: On a decrease in space temperature into the heating proportional band, the unit fan will energize.

Reheat Operation: On a decrease in space temperature, the heating valve is modulated to increase heat proportionally to the room demand.

LEGEND

- FACTORY FLOW SENSOR TUBING
- FACTORY ELECTRICAL WIRING
- - - - - FIELD ELECTRICAL WIRING

CONTROL GRAPH



PROJECT:

ENGINEER:

CUSTOMER:

SUBMITTAL DATE:

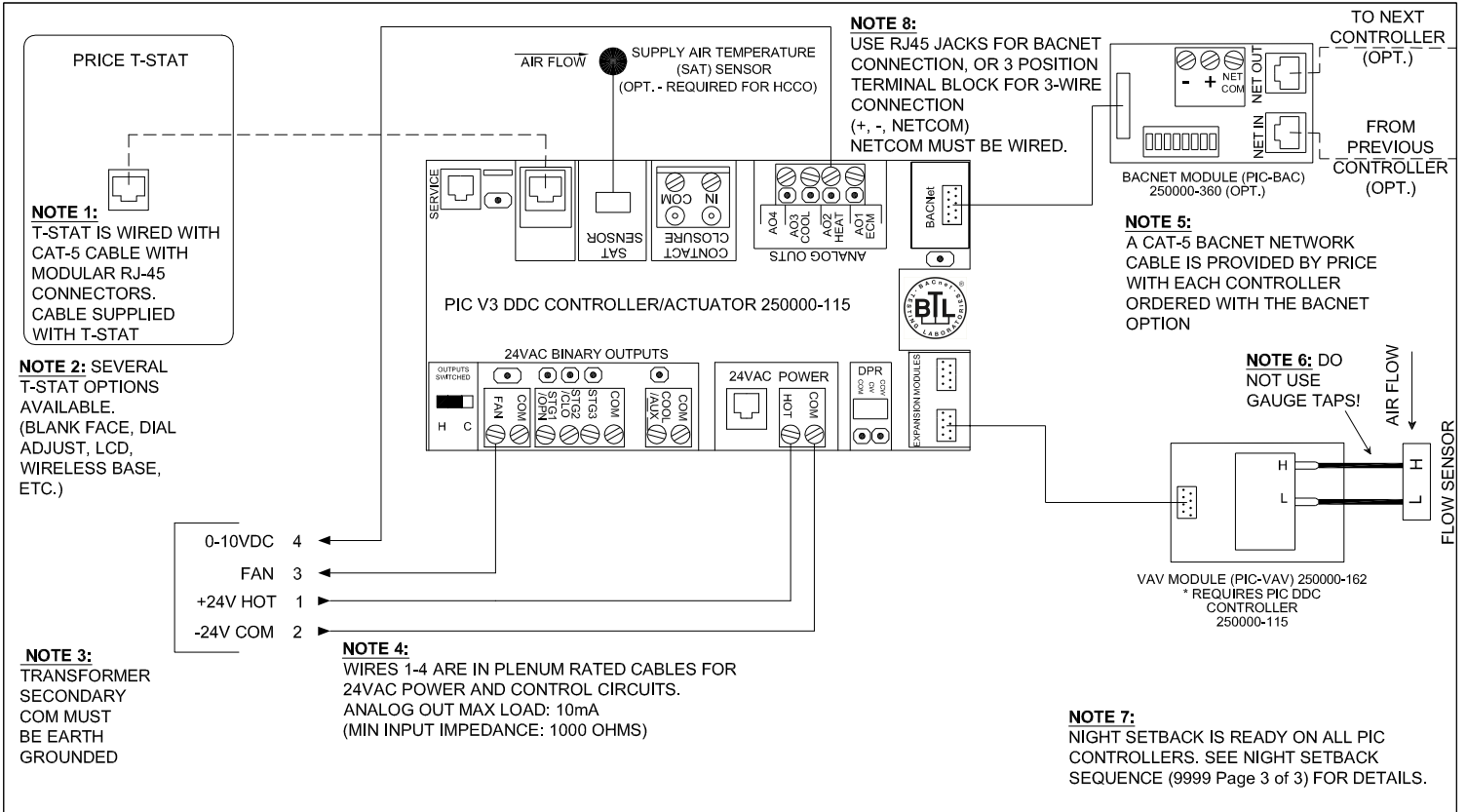
SPEC. SYMBOL:

PRICE[®]

FAN POWERED VARIABLE VOLUME PARALLEL FLOW
 V.V. PRESSURE INDEPENDENT HEAT/COOL C/O OR COOLING WITH TRI-STATE MODULATING HOT WATER REHEAT, FIELD WIRED

249520

2017/08/11

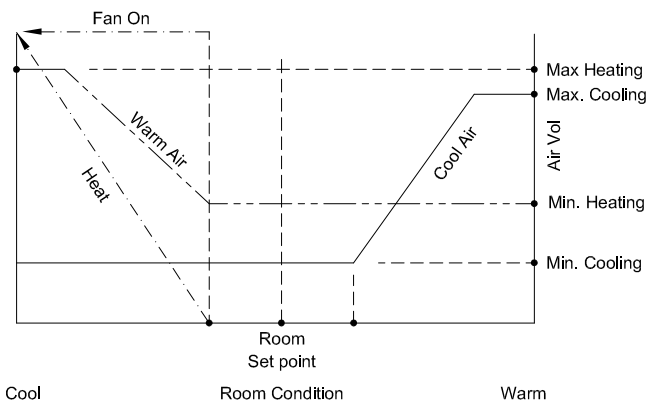


Calibration note: Suitable min and max heating flows must be selected in order to maintain flow through energized electric coils of at least 200 fpm and at least 70 cfm/kW throughout the entire operating range.

LEGEND

- FACTORY FLOW SENSOR TUBING
- FACTORY ELECTRICAL WIRING
- - - - - FIELD ELECTRICAL WIRING

CONTROL GRAPH



Sequence of Operation -- Variable Volume Heat/cool changeover OR Cooling With Analog modulating reheat - Pressure Independent

On power up the damper will calibrate closed for 2 minutes.
If no SAT sensor is present, controller assumes Cool supply air at all times

Cool supply air: On an increase in space temperature the controller regulates the actuator to open the VAV damper and increase the flow of cool air. On an increase of space temperature greater than the cooling proportional band, the airflow is maintained at its pre-selected maximum setting. On a decrease in space temperature the controller regulates the actuator to close the VAV damper and reduce the flow of cool air. If the space temperature decreases to less than the cooling proportional band, the airflow is maintained at the pre-selected minimum setting.

Warm supply air: On a decrease in space temperature the controller regulates the actuator to open the VAV damper and increase the flow of warm air. On a decrease of space temperature greater than the heating proportional band, the airflow is maintained at its pre-selected maximum setting. On an increase in space temperature the controller regulates the actuator to close the VAV damper and reduce the flow of warm air. If the space temperature increases above the heating proportional band, the airflow is maintained at the pre-selected minimum setting.

Fan Operation: On a decrease in space temperature into the heating proportional band, the unit fan will energize.

Reheat Operation: On a decrease in space temperature, the controller modulates the 0-10VDC output to increase heat proportionally to the room demand.

PROJECT:

ENGINEER:

CUSTOMER:

SUBMITTAL DATE:

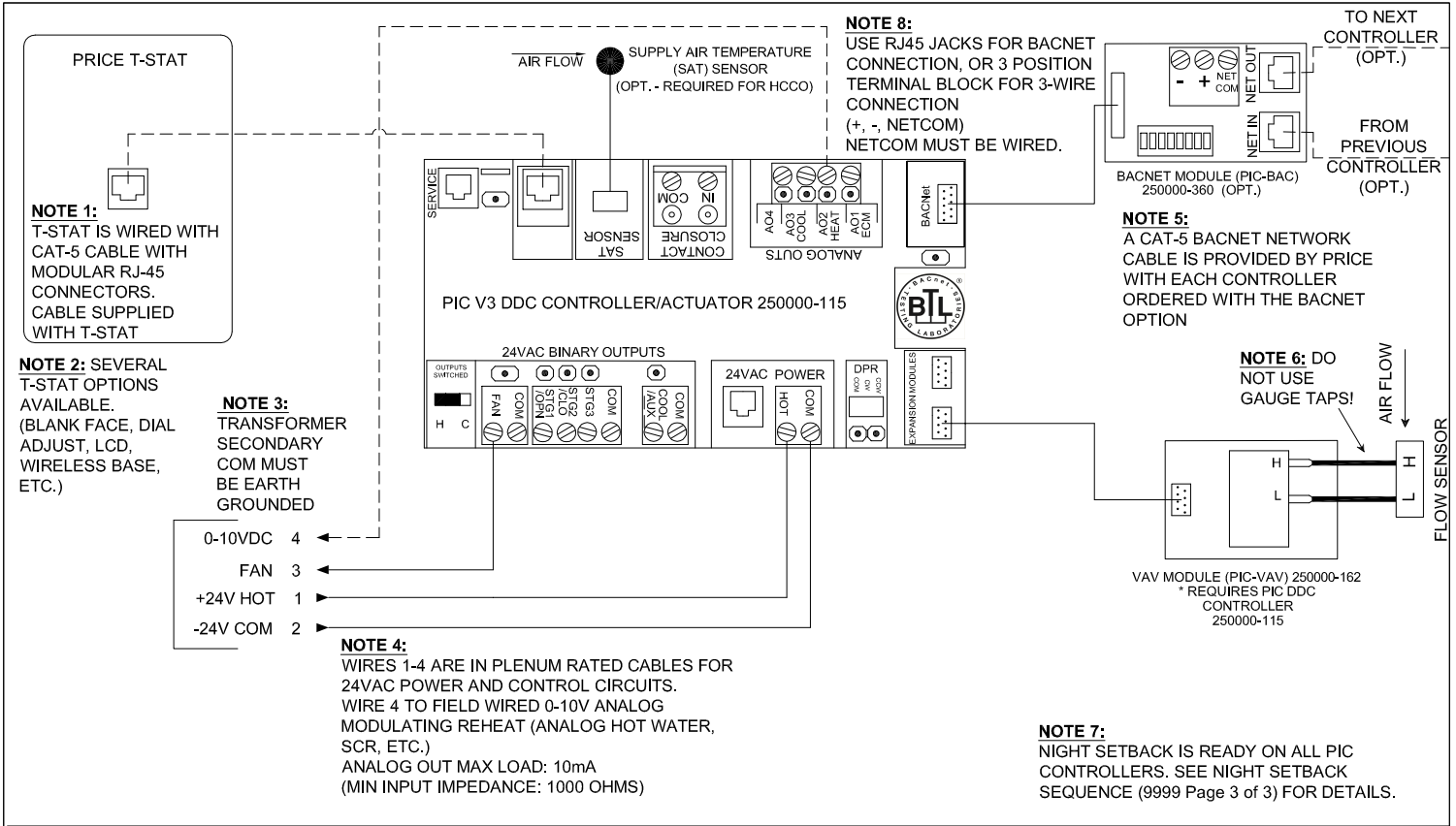
SPEC. SYMBOL:

PRICE®

FAN POWERED VARIABLE VOLUME PARALLEL FLOW
V.V. PRESSURE INDEPENDENT HEAT/COOL C/O OR COOLING WITH ANALOG ELECTRIC HEAT
FACTORY WIRED

249521

2017/08/11

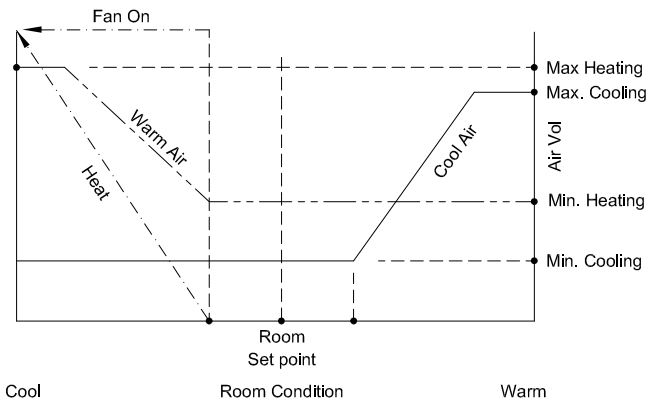


Calibration note: Suitable min and max heating flows must be selected in order to maintain flow through energized electric coils of at least 200 fpm and at least 70 cfm/kW throughout the entire operating range.

LEGEND

- FACTORY FLOW SENSOR TUBING
- FACTORY ELECTRICAL WIRING
- FIELD ELECTRICAL WIRING

CONTROL GRAPH



Sequence of Operation -- Variable Volume Heat/cool changeover OR Cooling With Analog modulating reheat - Pressure Independent

On power up the damper will calibrate closed for 2 minutes.
If no SAT sensor is present, controller assumes Cool supply air at all times

Cool supply air: On an increase in space temperature the controller regulates the actuator to open the VAV damper and increase the flow of cool air. On an increase of space temperature greater than the cooling proportional band, the airflow is maintained at its pre-selected maximum setting. On a decrease in space temperature the controller regulates the actuator to close the VAV damper and reduce the flow of cool air. If the space temperature decreases to less than the cooling proportional band, the airflow is maintained at the pre-selected minimum setting.

Warm supply air: On a decrease in space temperature the controller regulates the actuator to open the VAV damper and increase the flow of warm air. On a decrease of space temperature greater than the heating proportional band, the airflow is maintained at its pre-selected maximum setting. On an increase in space temperature the controller regulates the actuator to close the VAV damper and reduce the flow of warm air. If the space temperature increases above the heating proportional band, the airflow is maintained at the pre-selected minimum setting.

Fan Operation: On a decrease in space temperature into the heating proportional band, the unit fan will energize.

Reheat Operation: On a decrease in space temperature, the controller modulates the 0-10VDC output to increase heat proportionally to the room demand.

PROJECT:

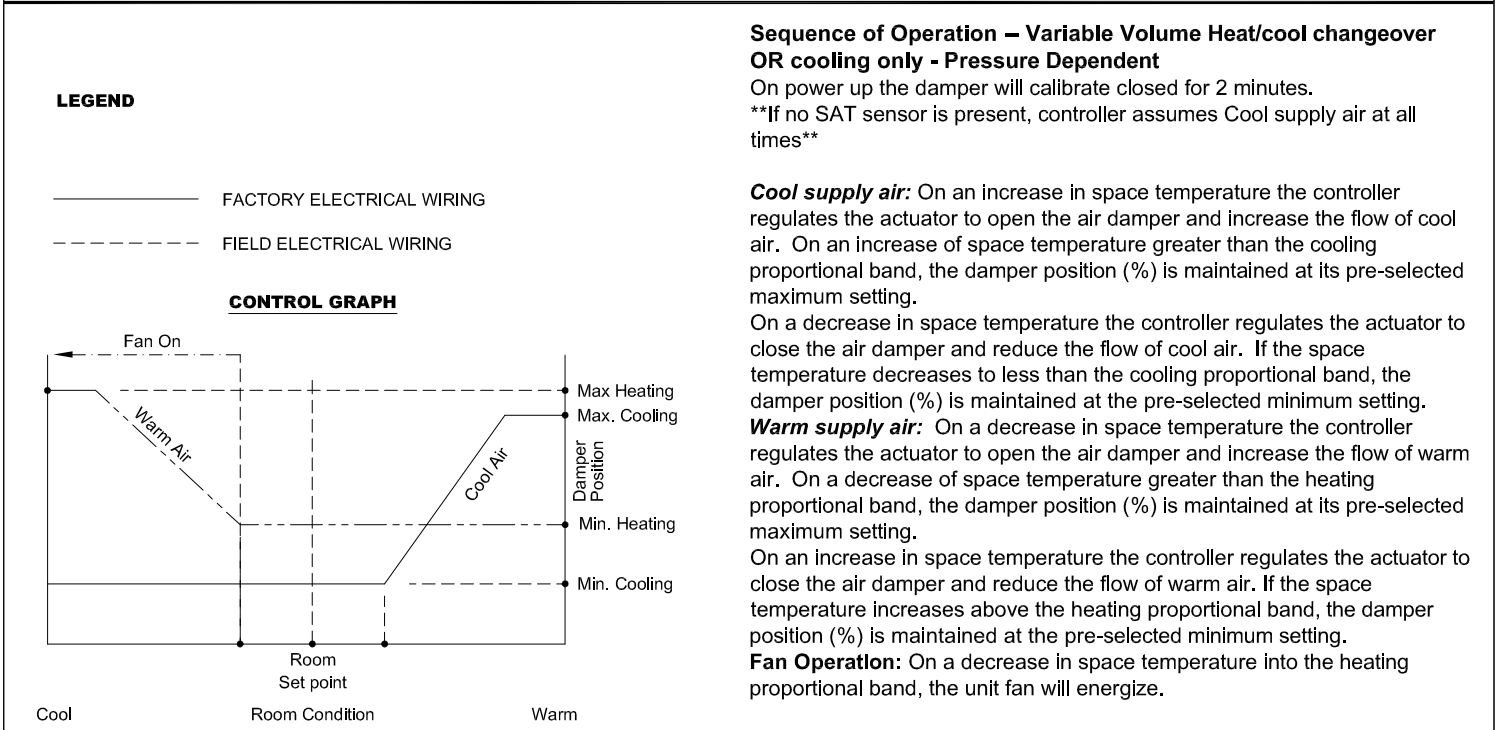
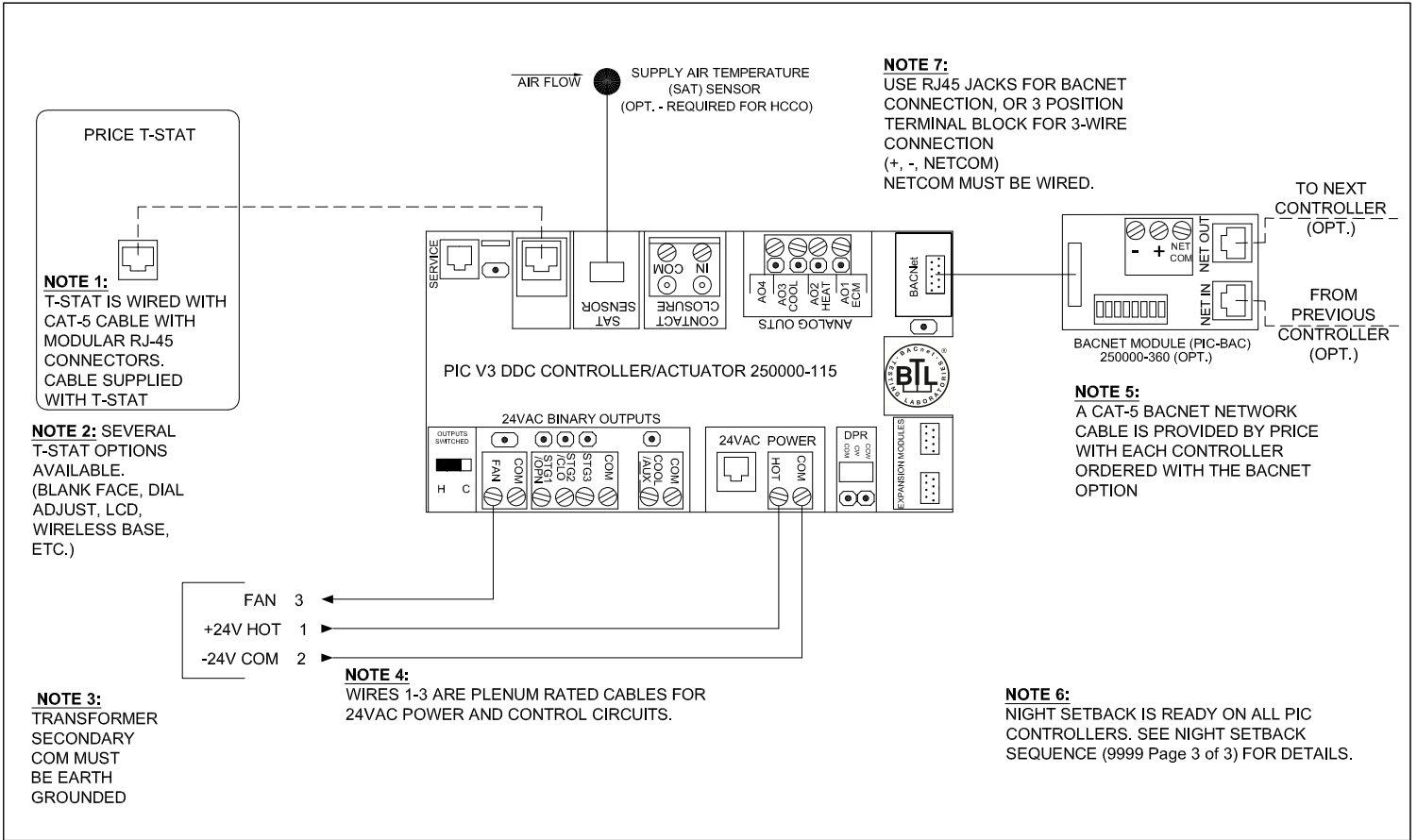
ENGINEER:

CUSTOMER:

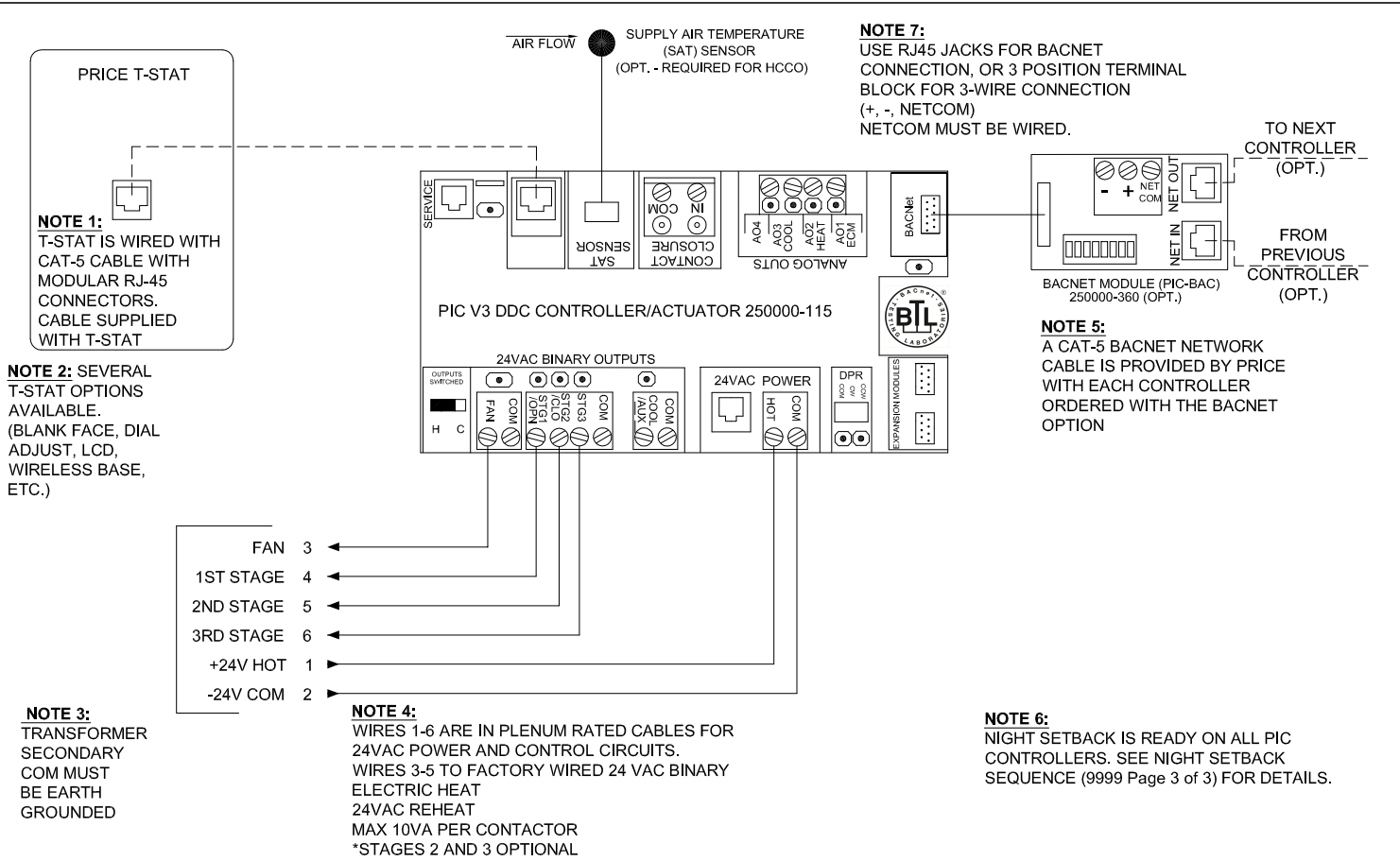
SUBMITTAL DATE:

SPEC. SYMBOL:

	<p>FAN POWERED VARIABLE VOLUME PARALLEL FLOW V.V. PRESSURE INDEPENDENT HEAT/COOL C/O OR COOLING WITH ANALOG HEAT FIELD WIRED</p>
<p>249522</p>	
<p>2017/08/11</p>	
<p>REV F</p>	



PROJECT:		PRICE [®]
ENGINEER:		
CUSTOMER:		249523
SUBMITTAL DATE:	SPEC. SYMBOL:	2017/08/11



Calibration note: Suitable min and max heating flows must be selected in order to maintain flow through energized electric coils of at least 200 fpm and at least 70 cfm/kW throughout the entire operating range.

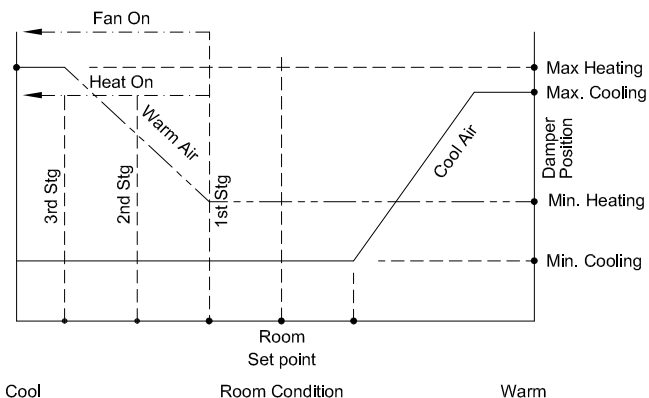
Sequence of Operation -- Variable Volume Heat/cool changeover OR cooling With up to 3 stage binary reheat - Pressure Dependent

On power up the damper will calibrate closed for 2 minutes.
If no SAT sensor is present, controller assumes Cool supply air at all times

LEGEND

- FACTORY ELECTRICAL WIRING
- - - - - FIELD ELECTRICAL WIRING

CONTROL GRAPH




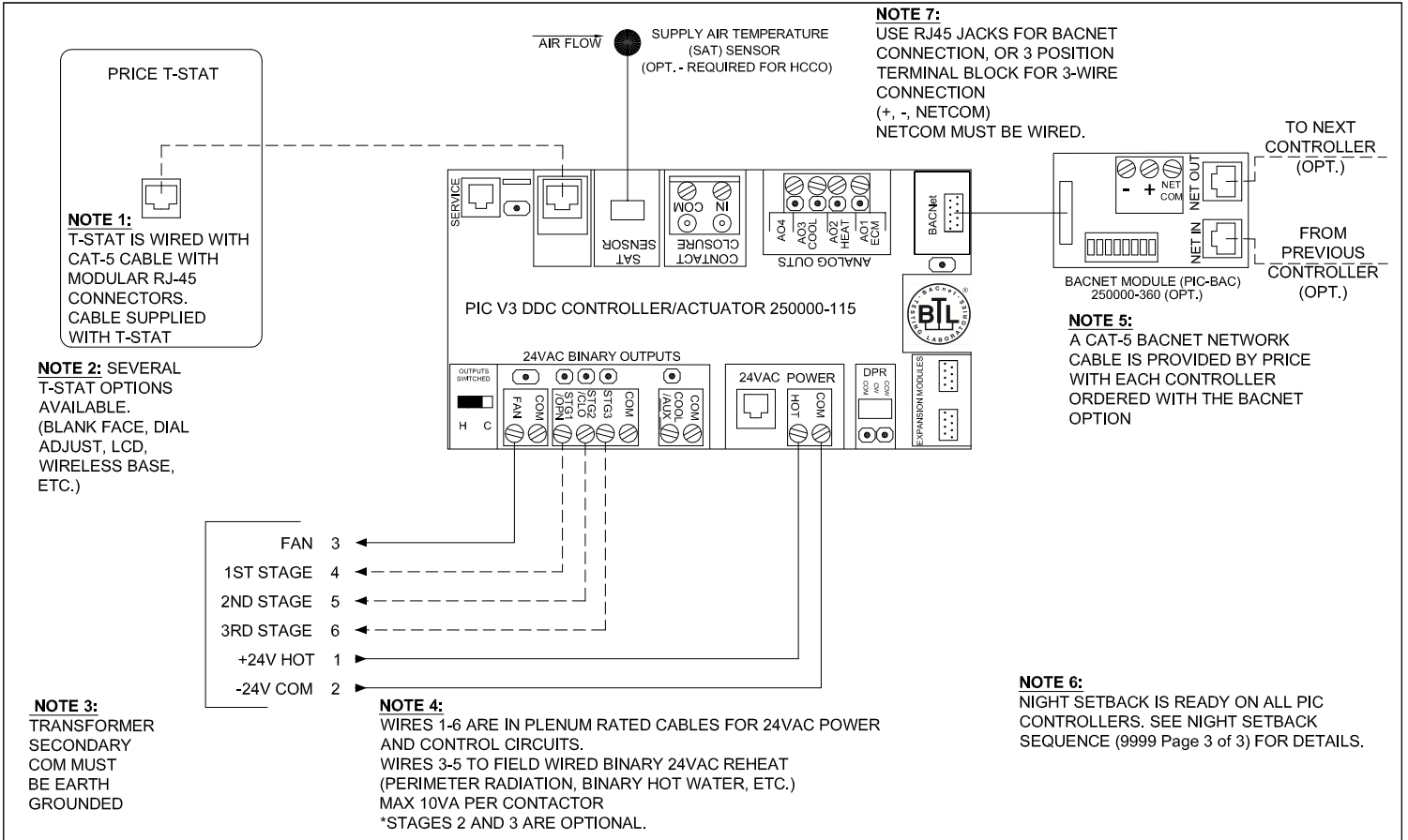
Cool supply air: On an increase in space temperature the controller regulates the actuator to open the air damper and increase the flow of cool air. On an increase of space temperature greater than the cooling proportional band, the damper position (%) is maintained at its pre-selected maximum setting. On a decrease in space temperature the controller regulates the actuator to close the air damper and reduce the flow of cool air. If the space temperature decreases to less than the cooling proportional band, the damper position (%) is maintained at the pre-selected minimum setting.

Warm supply air: On a decrease in space temperature the controller regulates the actuator to open the air damper and increase the flow of warm air. On a decrease of space temperature greater than the heating proportional band, the damper position (%) is maintained at its pre-selected maximum setting. On an increase in space temperature the controller regulates the actuator to close the air damper and reduce the flow of warm air. If the space temperature increases above the heating proportional band, the damper position (%) is maintained at the pre-selected minimum setting.

Fan Operation: On a decrease in space temperature into the heating proportional band, the unit fan will energize.

Reheat Operation: On a decrease in space temperature into the heating proportional band, the 1st stage binary 24VAC reheat output will energize. Upon further decreases, the 2nd then 3rd stages of reheat (if used) will energize.

PROJECT:		PRICE	
ENGINEER:			
CUSTOMER:		249524	
SUBMITTAL DATE:	SPEC. SYMBOL:	2017/08/11	
		FAN POWERED VARIABLE VOLUME PARALLEL FLOW V.V. PRESSURE DEPENDENT HEAT/COOL C/O COOLING WITH UP TO 3 STG BINARY REHEAT FACTORY WIRED	



Calibration note: Suitable min and max heating flows must be selected in order to maintain flow through energized electric coils of at least 200 fpm and at least 70 cfm/kW throughout the entire operating range.

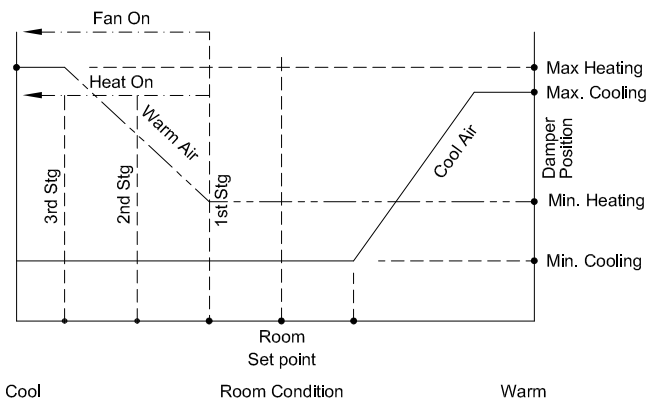
Sequence of Operation -- Variable Volume Heat/cool changeover OR cooling With up to 3 stage binary reheat - Pressure Dependent

On power up the damper will calibrate closed for 2 minutes.
If no SAT sensor is present, controller assumes Cool supply air at all times

LEGEND

- FACTORY ELECTRICAL WIRING
- - - - - FIELD ELECTRICAL WIRING

CONTROL GRAPH



Cool supply air: On an increase in space temperature the controller regulates the actuator to open the air damper and increase the flow of cool air. On an increase of space temperature greater than the cooling proportional band, the damper position (%) is maintained at its pre-selected maximum setting. On a decrease in space temperature the controller regulates the actuator to close the air damper and reduce the flow of cool air. If the space temperature decreases to less than the cooling proportional band, the damper position (%) is maintained at the pre-selected minimum setting.

Warm supply air: On a decrease in space temperature the controller regulates the actuator to open the air damper and increase the flow of warm air. On a decrease of space temperature greater than the heating proportional band, the damper position (%) is maintained at its pre-selected maximum setting. On an increase in space temperature the controller regulates the actuator to close the air damper and reduce the flow of warm air. If the space temperature increases above the heating proportional band, the damper position (%) is maintained at the pre-selected minimum setting.

Fan Operation: On a decrease in space temperature into the heating proportional band, the unit fan will energize.

Reheat Operation: On a decrease in space temperature into the heating proportional band, the 1st stage binary 24VAC reheat output will energize. Upon further decreases, the 2nd then 3rd stages of reheat (if used) will energize.


PROJECT:

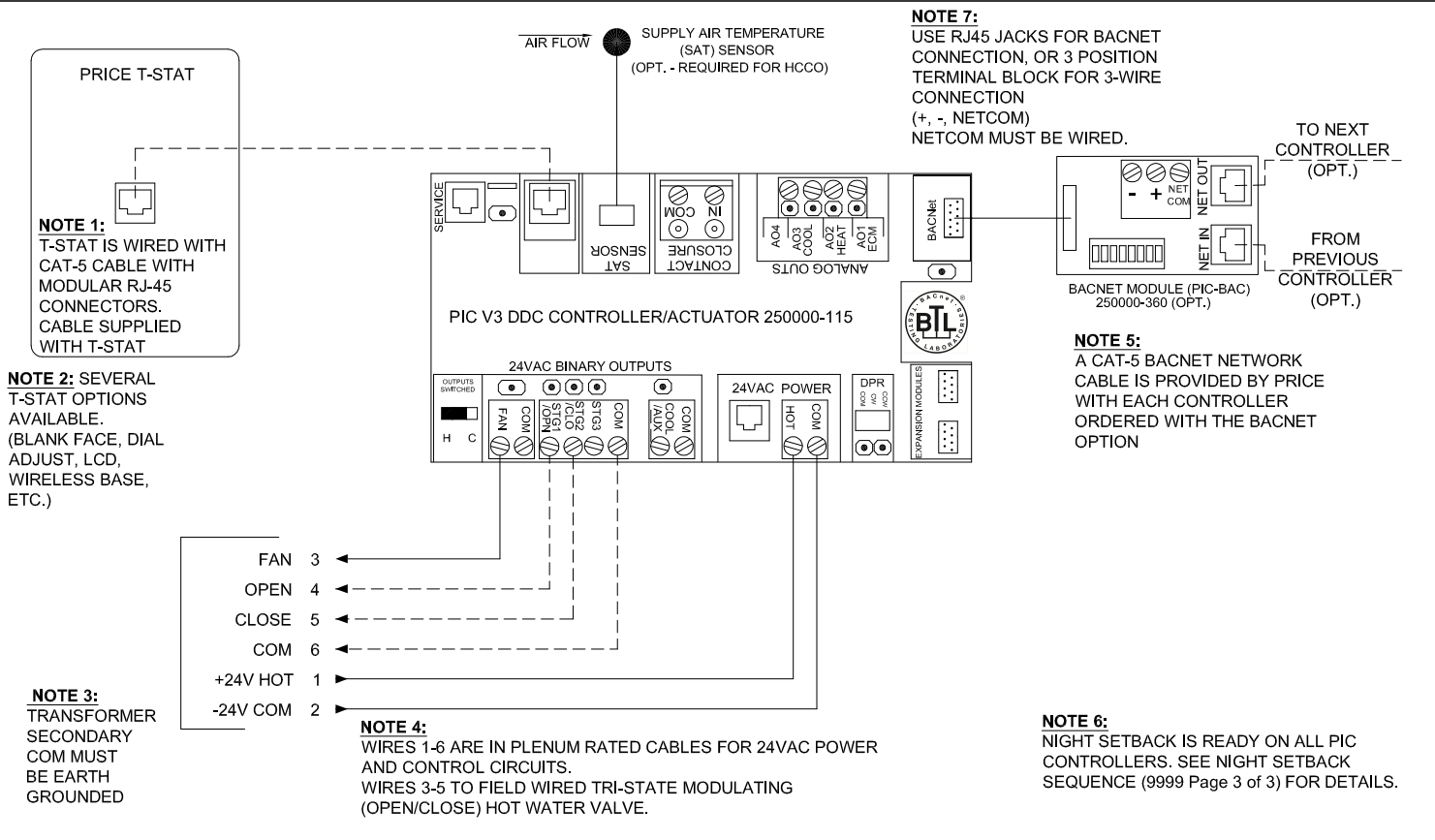
ENGINEER:

CUSTOMER:

SUBMITTAL DATE:

SPEC. SYMBOL:

PRICE [®]	
	FAN POWERED VARIABLE VOLUME PARALLEL FLOW V.V. PRESSURE DEPENDENT HEAT/COOL C/O COOLING WITH UP TO 3 STG BINARY REHEAT FIELD WIRED
249525	
2017/08/11	



Sequence of Operation -- Variable Volume Heat/cool changeover OR Cooling With Tri-State modulating HW reheat - Pressure Dependent

On power up the damper will calibrate closed for 2 minutes.
 If no SAT sensor is present, controller assumes Cool supply air at all times

Cool supply air: On an increase in space temperature the controller regulates the actuator to open the air damper and increase the flow of cool air. On an increase of space temperature greater than the cooling proportional band, the damper position (%) is maintained at its pre-selected maximum setting. On a decrease in space temperature the controller regulates the actuator to close the air damper and reduce the flow of cool air. If the space temperature decreases to less than the cooling proportional band, the damper position (%) is maintained at the pre-selected minimum setting.

Warm supply air: On a decrease in space temperature the controller regulates the actuator to open the air damper and increase the flow of warm air. On a decrease of space temperature greater than the heating proportional band, the damper position (%) is maintained at its pre-selected maximum setting. On an increase in space temperature the controller regulates the actuator to close the air damper and reduce the flow of warm air. If the space temperature increases above the heating proportional band, the damper position (%) is maintained at the pre-selected minimum setting.

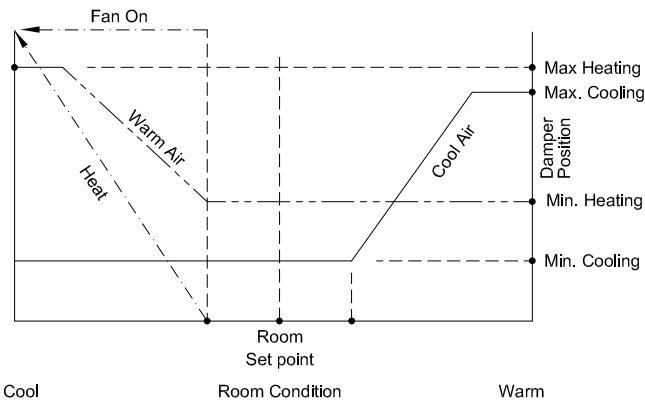
Fan Operation: On a decrease in space temperature into the heating proportional band, the unit fan will energize.

Reheat Operation: On a decrease in space temperature, the heating valve is modulated to increase heat proportionally to the room demand.

LEGEND

————— FACTORY ELECTRICAL WIRING
 - - - - - FIELD ELECTRICAL WIRING

CONTROL GRAPH



PROJECT:

ENGINEER:

CUSTOMER:

SUBMITTAL DATE:

SPEC. SYMBOL:

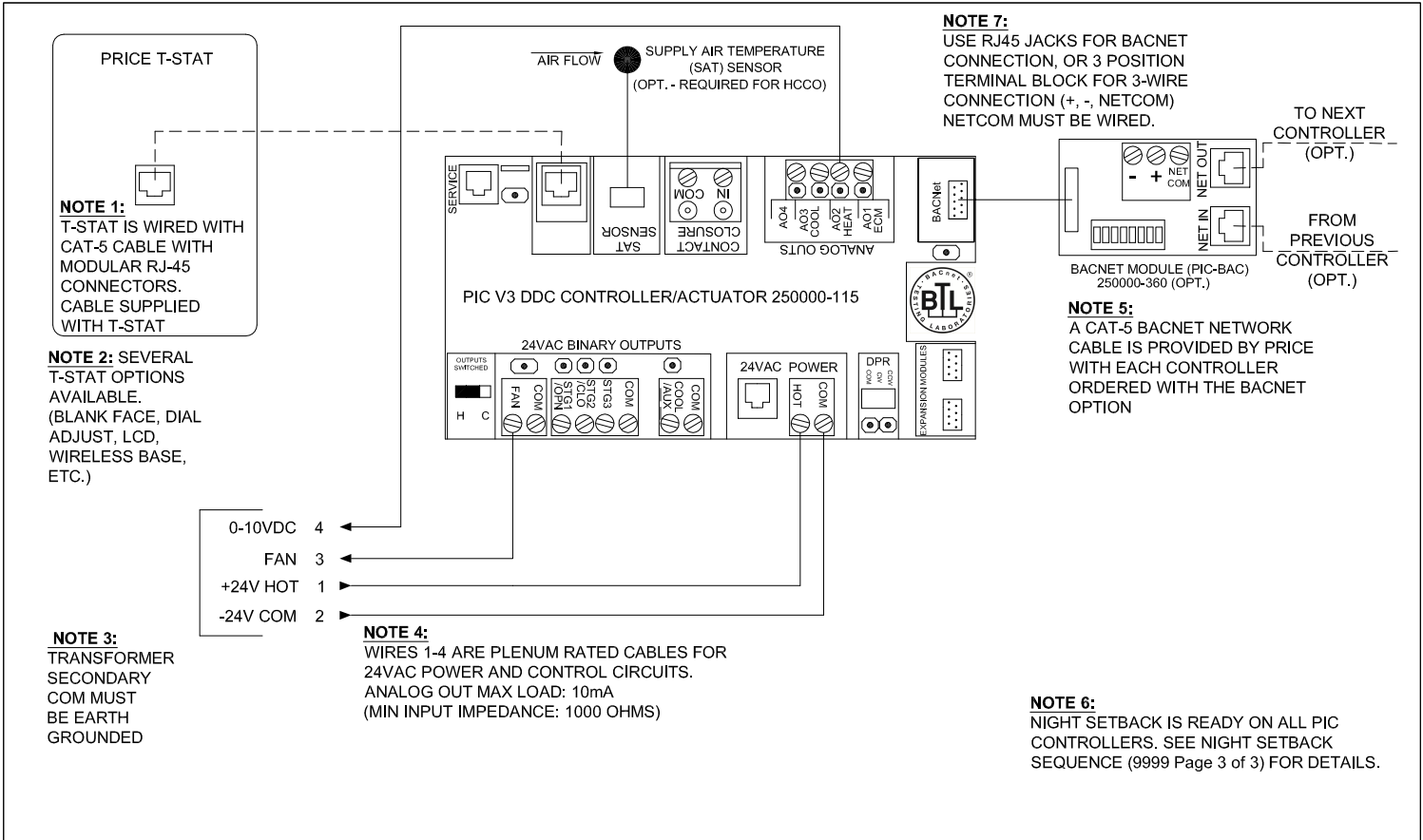


BE MB

FAN POWERED VARIABLE VOLUME PARALLEL FLOW
 V.V. PRESSURE DEPENDENT
 HEAT/COOL C/O OR COOLING
 WITH TRI-STATE MODULATING
 HOT WATER REHEAT, FIELD WIRED

249526

2017/08/11



Calibration note: Suitable min and max heating flows must be selected in order to maintain flow through energized electric coils of at least 200 fpm and at least 70 cfm/kW throughout the entire operating range.

Sequence of Operation -- Variable Volume Heat/cool changeover OR Cooling With Analog modulating reheat - Pressure Dependent

On power up the damper will calibrate closed for 2 minutes.
 If no SAT sensor is present, controller assumes Cool supply air at all times

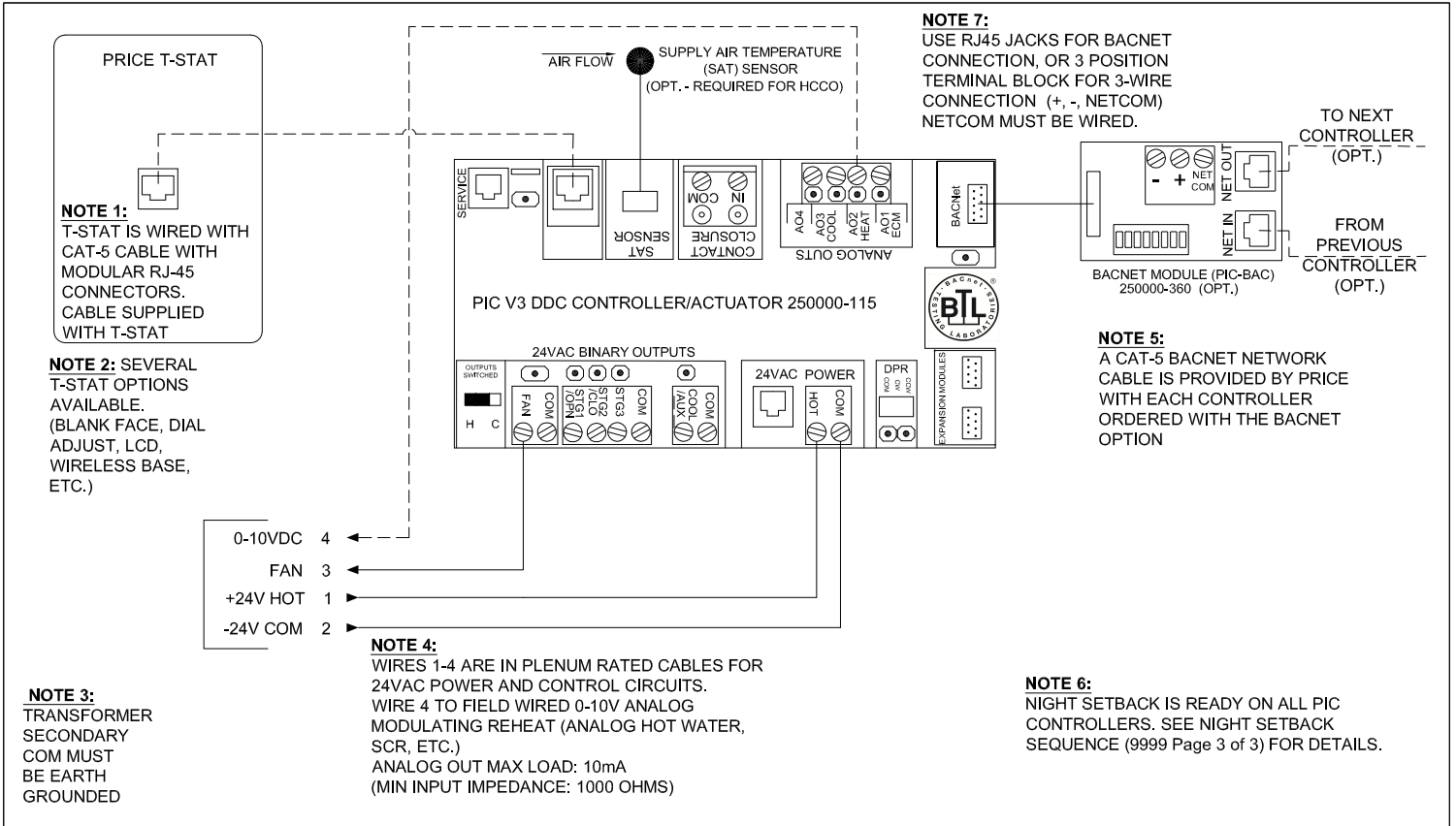
Cool supply air: On an increase in space temperature the controller regulates the actuator to open the air damper and increase the flow of cool air. On an increase of space temperature greater than the cooling proportional band, the damper position (%) is maintained at its pre-selected maximum setting. On a decrease in space temperature the controller regulates the actuator to close the air damper and reduce the flow of cool air. If the space temperature decreases to less than the cooling proportional band, the damper position (%) is maintained at the pre-selected minimum setting.

Warm supply air: On a decrease in space temperature the controller regulates the actuator to open the air damper and increase the flow of warm air. On a decrease of space temperature greater than the heating proportional band, the damper position (%) is maintained at its pre-selected maximum setting.

On an increase in space temperature the controller regulates the actuator to close the air damper and reduce the flow of warm air. If the space temperature increases above the heating proportional band, the damper position (%) is maintained at the pre-selected minimum setting.

Fan Operation: On a decrease in space temperature into the heating proportional band, the unit fan will energize.

Reheat Operation: On a decrease in space temperature, the controller modulates the 0-10VDC output to increase heat proportionally to the room demand.

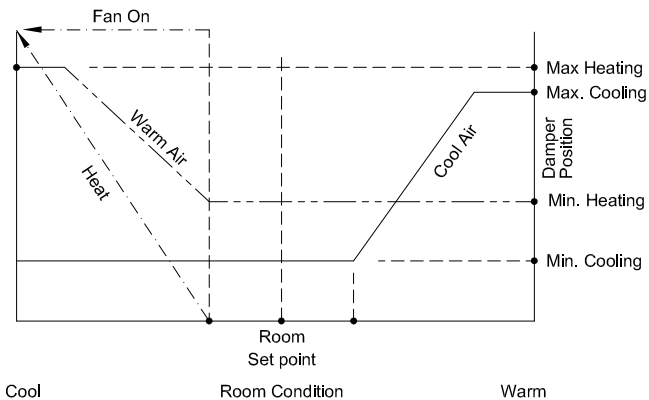


Calibration note: Suitable min and max heating flows must be selected in order to maintain flow through energized electric coils of at least 200 fpm and at least 70 cfm/kW throughout the entire operating range.

LEGEND

- FACTORY ELECTRICAL WIRING
- - - - - FIELD ELECTRICAL WIRING

CONTROL GRAPH



Sequence of Operation -- Variable Volume Heat/cool changeover OR Cooling With Analog modulating reheat - Pressure Dependent

On power up the damper will calibrate closed for 2 minutes.
If no SAT sensor is present, controller assumes Cool supply air at all times

Cool supply air: On an increase in space temperature the controller regulates the actuator to open the air damper and increase the flow of cool air. On an increase of space temperature greater than the cooling proportional band, the damper position (%) is maintained at its pre-selected maximum setting. On a decrease in space temperature the controller regulates the actuator to close the air damper and reduce the flow of cool air. If the space temperature decreases to less than the cooling proportional band, the damper position (%) is maintained at the pre-selected minimum setting.

Warm supply air: On a decrease in space temperature the controller regulates the actuator to open the air damper and increase the flow of warm air. On a decrease of space temperature greater than the heating proportional band, the damper position (%) is maintained at its pre-selected maximum setting.

On an increase in space temperature the controller regulates the actuator to close the air damper and reduce the flow of warm air. If the space temperature increases above the heating proportional band, the damper position (%) is maintained at the pre-selected minimum setting.

Fan Operation: On a decrease in space temperature into the heating proportional band, the unit fan will energize.

Reheat Operation: On a decrease in space temperature, the controller modulates the 0-10VDC output to increase heat proportionally to the room demand.


PROJECT:

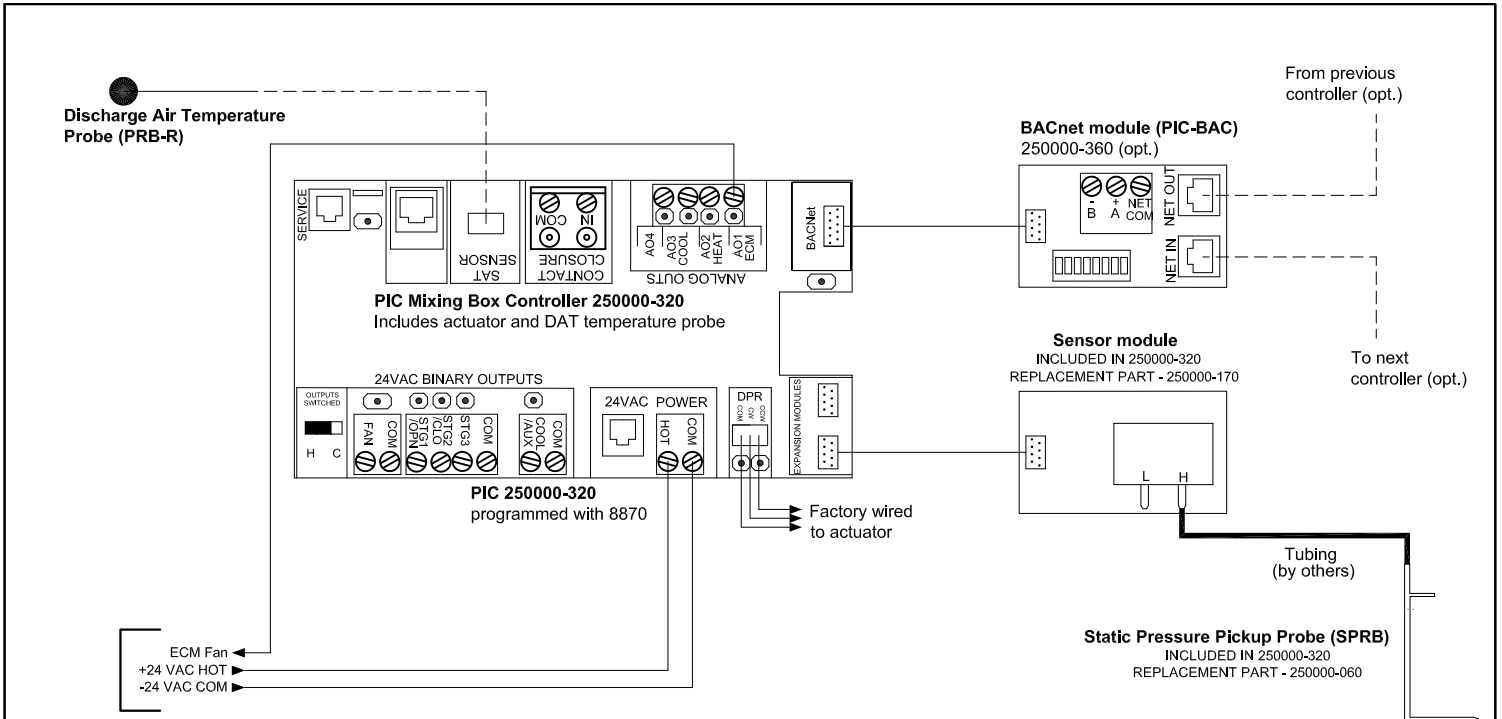
ENGINEER:

CUSTOMER:

SUBMITTAL DATE:

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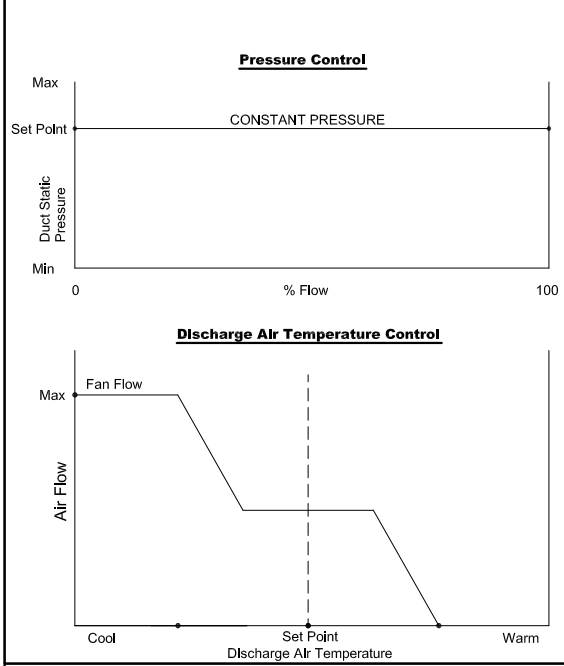
PRICE [®]	
	FAN POWERED VARIABLE VOLUME PARALLEL FLOW V.V. PRESSURE DEPENDENT HEAT/COOL C/O OR COOLING WITH ANALOG HEAT FIELD WIRED
249528	
2017/08/11	



NOTE 1:
Static pressure set point is factory calibrated to 0.3" W.C. It can be changed in the field using either:
1. BACnet front end
2. Price USB **LINKER** interface
3. **LCD-SETUP tool** (or similar LCD T-stat)

NOTE 2:
Measure static pressure approx 2/3 of the way down the main duct. Low port (L) on the pressure sensor must not be obstructed.

LEGEND	
	FLOW SENSOR TUBING
	FACTORY ELECTRICAL WIRING
	FIELD ELECTRICAL WIRING



Sequence of Operation -- Pressure Control with Discharge Air Temperature Control

On startup, the controller will calibrate to the fully-closed position for 2 minutes.

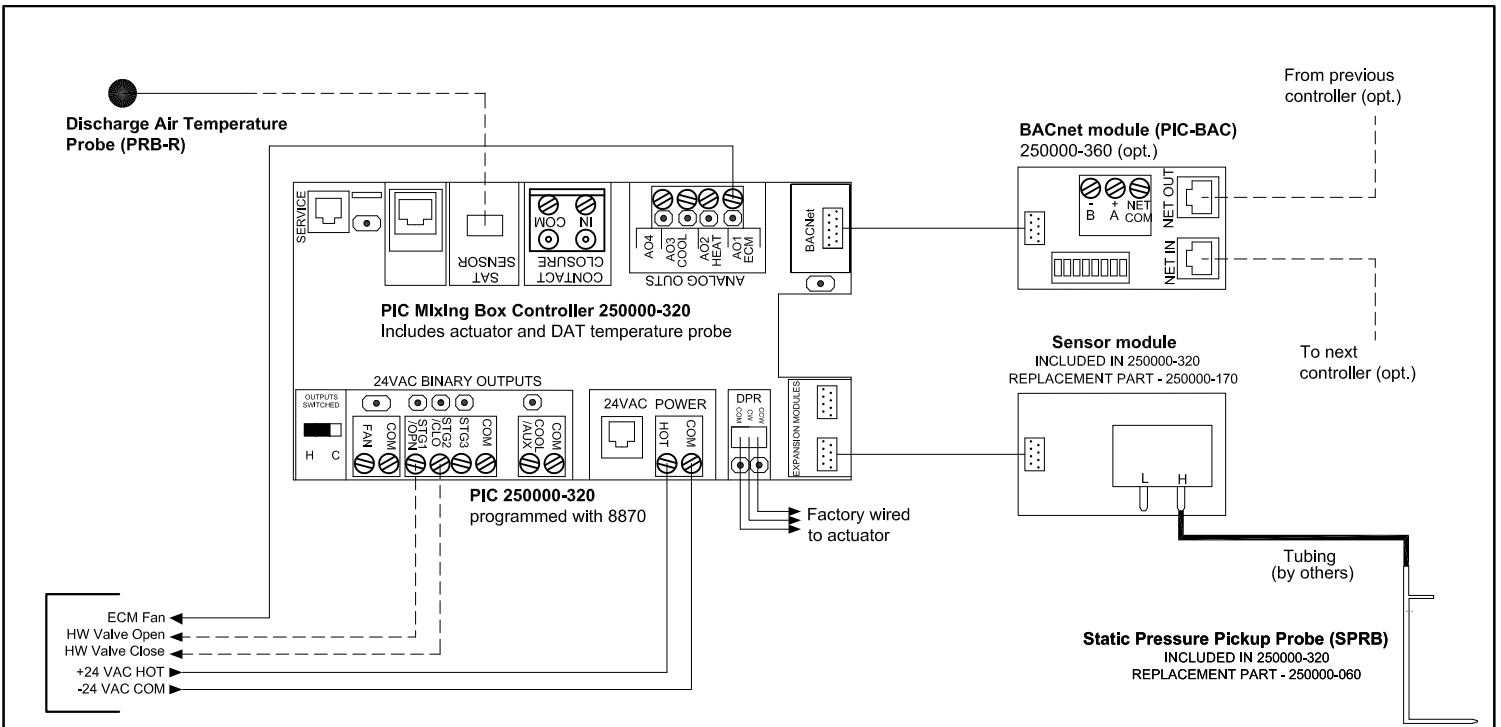
Pressure Control: On an increase in duct static pressure the controller will close the inlet damper to decrease the amount of air delivered downstream of the box. On a decrease in duct static pressure the controller will open the inlet damper to increase the amount of air delivered downstream of the box. Duct static pressure is held constant.

Upon detection of air handler shutdown (Zero duct pressure with VAV damper fully open), the controller/actuator will place the damper at the pre-selected setback position (default: 50% open)

Discharge Air Temperature (DAT) Control: When the DAT falls below the set point, the fan will speed up to increase the amount of return air as a first stage of heat control. On an increase in DAT above the set point, the fan will slow down to draw less return air.

Note: Primary air must be cooler than the DAT set point because the controller can only add heat to the primary air.

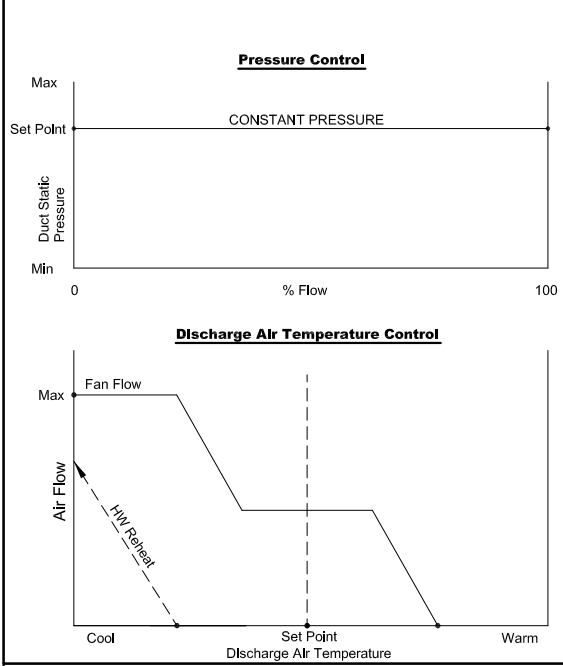
PROJECT:		
ENGINEER:		
CUSTOMER:		260417
SUBMITTAL DATE:		2012/04/18
SPEC. SYMBOL:		FDV MIXING BOX PIC-MB PRESSURE AND DAT CONTROL 1st STAGE REHEAT FAN



LEGEND	
	FLOW SENSOR TUBING
	FACTORY ELECTRICAL WIRING
	FIELD ELECTRICAL WIRING

NOTE 1:
Static pressure set point is factory calibrated to 0.3" W.C. It can be changed in the field using either:
1. BACnet front end
2. Price USB **LINKER** interface
3. **LCD-SETUP tool** (or similar LCD T-stat)

NOTE 2:
Measure static pressure approx 2/3 of the way down the main duct. Low port (L) on the pressure sensor must not be obstructed.



Sequence of Operation -- Pressure Control with Discharge Air Temperature Control

On startup, the controller will calibrate to the fully-closed position for 2 minutes.

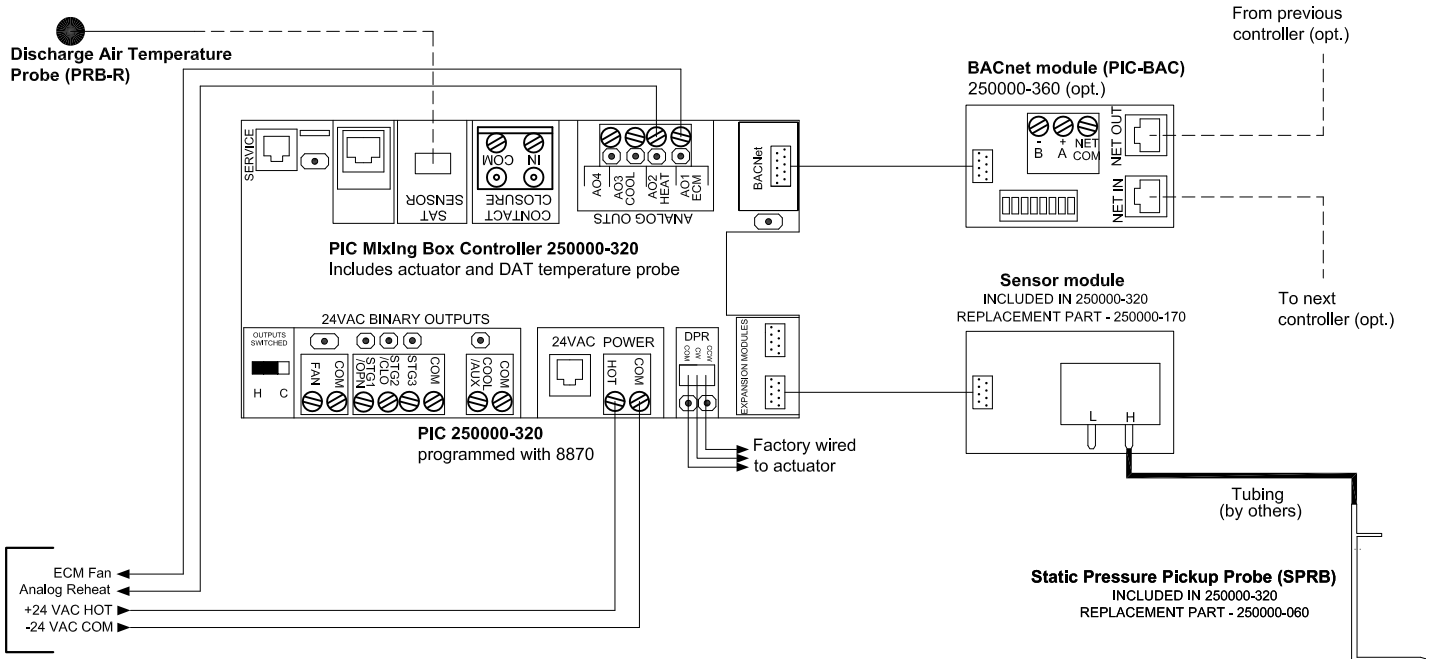
Pressure Control: On an increase in duct static pressure the controller will close the inlet damper to decrease the amount of air delivered downstream of the box. On a decrease in duct static pressure the controller will open the inlet damper to increase the amount of air delivered downstream of the box. Duct static pressure is held constant.

Upon detection of air handler shutdown (Zero duct pressure with VAV damper fully open), the controller/actuator will place the damper at the pre-selected setback position (default: 50% open)

Discharge Air Temperature (DAT) Control: When the DAT falls below the set point, the fan will speed up to increase the amount of return air as a first stage of heat control. If the fan is at maximum speed and DAT is still below set point, a second stage of analog reheat will be activated and modulated. On an increase in DAT above the set point, the fan will slow down to draw less return air.

Note: Primary air must be cooler than the DAT set point because the controller can only add heat to the primary air.

PROJECT:		PRICE [®]	
ENGINEER:		BAM / JH	FDV MIXING BOX PIC-MB PRESSURE AND DAT CONTROL 1st STAGE REHEAT FAN 2nd STAGE TRISTATE HW REHEAT
CUSTOMER:		260418	
SUBMITTAL DATE:	SPEC. SYMBOL:	2012/04/18	REV 0

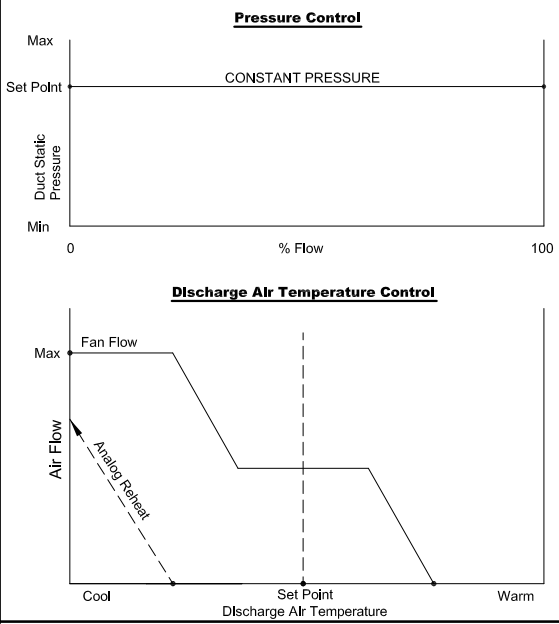


LEGEND

	FLOW SENSOR TUBING
	FACTORY ELECTRICAL WIRING
	FIELD ELECTRICAL WIRING

NOTE 1:
Static pressure set point is factory calibrated to 0.3" W.C. It can be changed in the field using either:
1. BACnet front end
2. Price USB *LINKER* interface
3. *LCD-SETUP tool* (or similar LCD T-stat)

NOTE 2:
Measure static pressure approx 2/3 of the way down the main duct. Low port (L) on the pressure sensor must not be obstructed.



Sequence of Operation -- Pressure Control with Discharge Air Temperature Control

On startup, the controller will calibrate to the fully-closed position for 2 minutes.

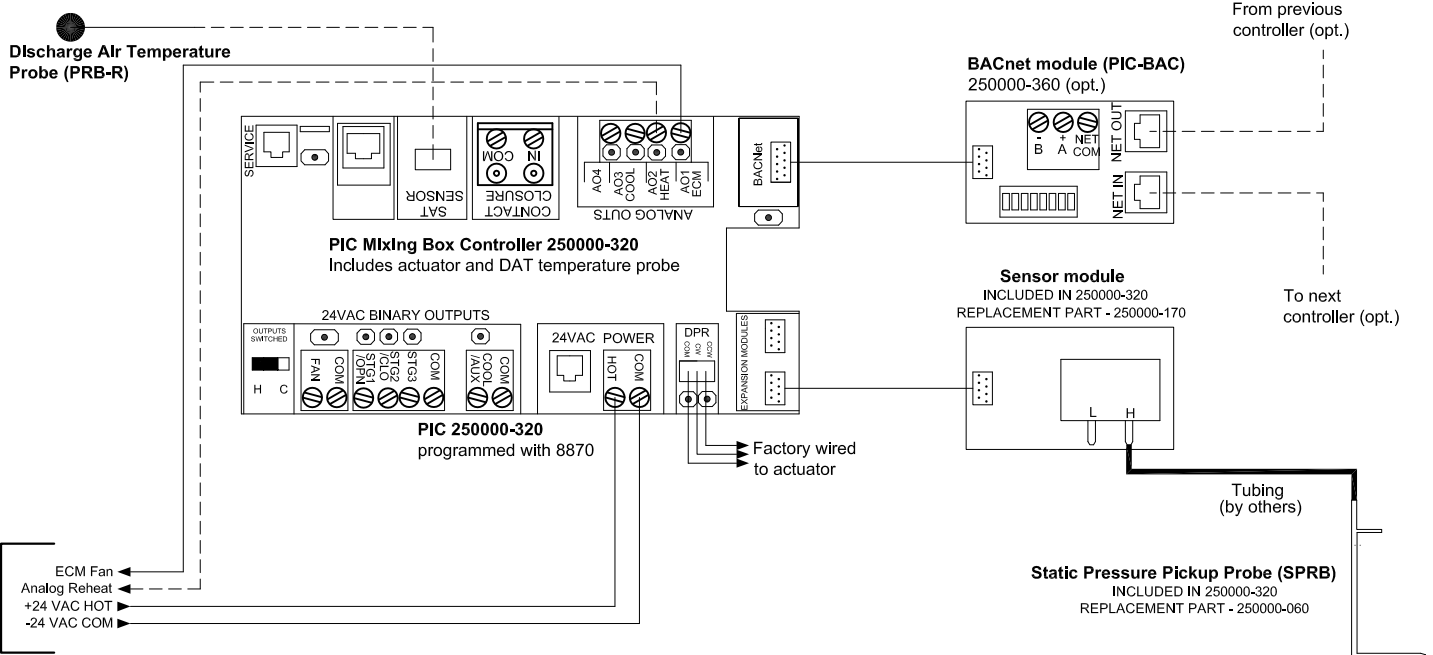
Pressure Control: On an increase in duct static pressure the controller will close the inlet damper to decrease the amount of air delivered downstream of the box. On a decrease in duct static pressure the controller will open the inlet damper to increase the amount of air delivered downstream of the box. Duct static pressure is held constant.

Upon detection of air handler shutdown (Zero duct pressure with VAV damper fully open), the controller/actuator will place the damper at the pre-selected setback position (default: 50% open)

Discharge Air Temperature (DAT) Control: When the DAT falls below the set point, the fan will speed up to increase the amount of return air as a first stage of heat control. If the fan is at maximum speed and DAT is still below set point, a second stage of analog reheat will be activated and modulated. On an increase in DAT above the set point, the fan will slow down to draw less return air.

Note: Primary air must be cooler than the DAT set point because the controller can only add heat to the primary air.

PROJECT:		
ENGINEER:		
CUSTOMER:		260419
SUBMITTAL DATE:	SPEC. SYMBOL:	2012/04/18
		FDV MIXING BOX PIC-MB PRESSURE AND DAT CONTROL 1st STAGE REHEAT FAN 2nd STAGE ANALOG REHEAT/Factory

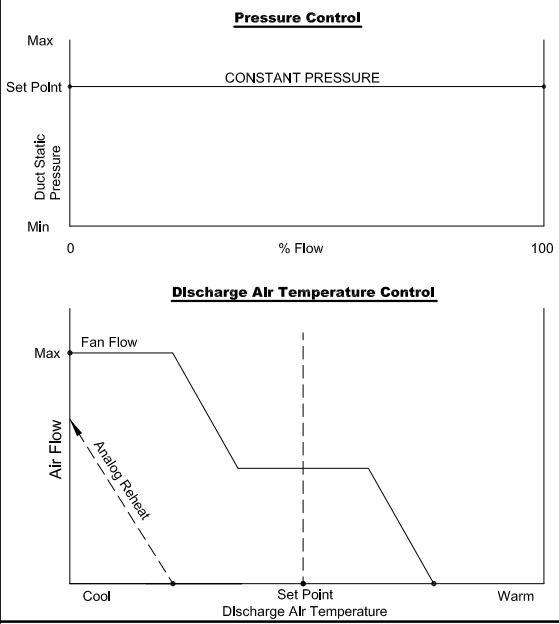


LEGEND

	FLOW SENSOR TUBING
	FACTORY ELECTRICAL WIRING
	FIELD ELECTRICAL WIRING

NOTE 1:
Static pressure set point is factory calibrated to 0.3" W.C. It can be changed in the field using either:
1. BACnet front end
2. Price USB *LINKER* interface
3. *LCD-SETUP tool* (or similar LCD T-stat)

NOTE 2:
Measure static pressure approx 2/3 of the way down the main duct. Low port (L) on the pressure sensor must not be obstructed.



Sequence of Operation -- Pressure Control with Discharge Air Temperature Control

On startup, the controller will calibrate to the fully-closed position for 2 minutes.

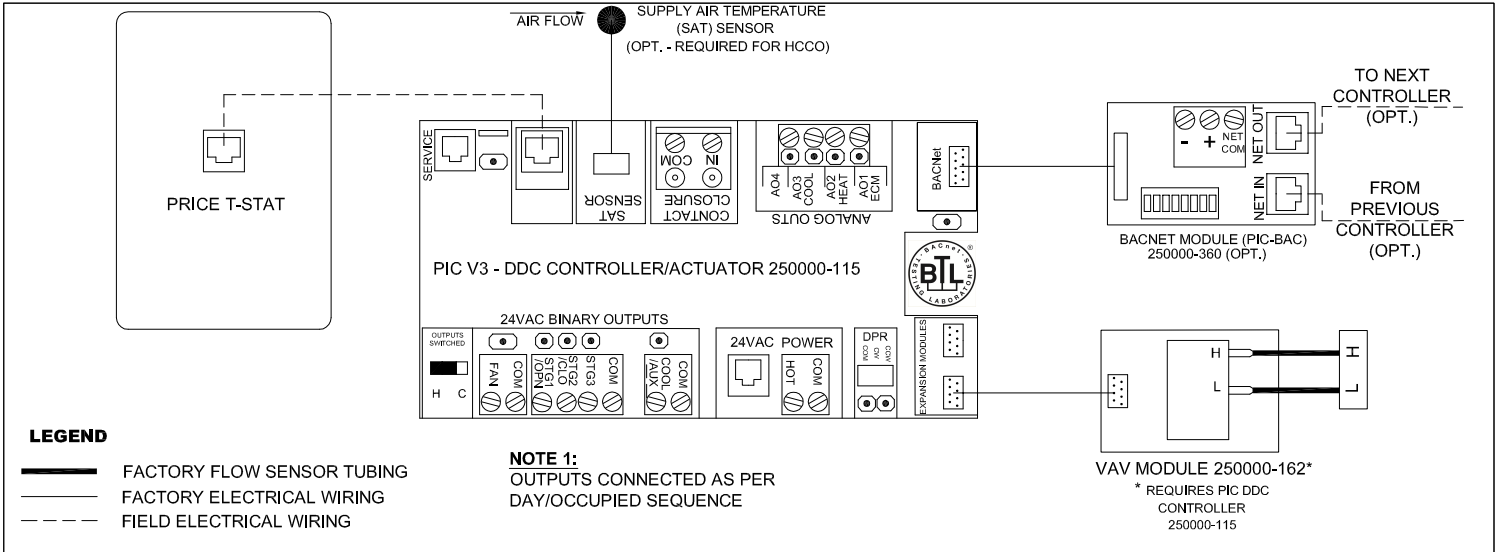
Pressure Control: On an increase in duct static pressure the controller will close the inlet damper to decrease the amount of air delivered downstream of the box. On a decrease in duct static pressure the controller will open the inlet damper to increase the amount of air delivered downstream of the box. Duct static pressure is held constant.

Upon detection of air handler shutdown (Zero duct pressure with VAV damper fully open), the controller/actuator will place the damper at the pre-selected setback position (default: 50% open)

Discharge Air Temperature (DAT) Control: When the DAT falls below the set point, the fan will speed up to increase the amount of return air as a first stage of heat control. If the fan is at maximum speed and DAT is still below set point, a second stage of analog reheat will be activated and modulated. On an increase in DAT above the set point, the fan will slow down to draw less return air.

Note: Primary air must be cooler than the DAT set point because the controller can only add heat to the primary air.

PROJECT:		
ENGINEER:		
CUSTOMER:		260420
SUBMITTAL DATE:		2012/04/18
SPEC. SYMBOL:		<p>FDV MIXING BOX PIC-MB</p> <p>PRESSURE AND DAT CONTROL</p> <p>1st STAGE REHEAT FAN</p> <p>2nd STAGE ANALOG REHEAT/Field</p>



LEGEND

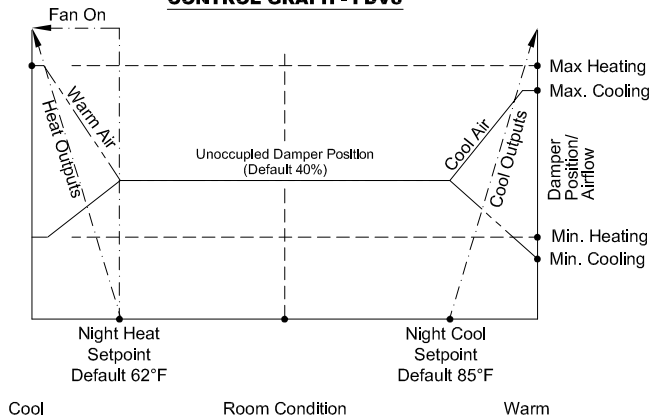
- FACTORY FLOW SENSOR TUBING
- FACTORY ELECTRICAL WIRING
- FIELD ELECTRICAL WIRING

NOTE 1:
OUTPUTS CONNECTED AS PER
DAY/OCCUPIED SEQUENCE

Entering and Exiting Night Setback: There are several methods for the PIC to enter and exit night setback (unoccupied mode). All of the following methods can be enabled or disabled in software or from the T-Stat menu.

- 1. Airflow Failure:** (Disabled by default) If using a Pressure Independant day sequence (with the PIC-VAV module), the controller will enter night setback when minimal airflow is sensed in the duct. The controller does this based on Day Flow Trip and Night Flow Trip (adjustable). *Day Flow Trip* is enabled when the controller sees more than 1/2 of its minimum airflow - i.e. min airflow = 132 cfm, Day Flow Trip = 66 cfm. *Night Flow Trip* is enabled when the controller sees less than 1/2 of its day flow trip value - i.e. 33 cfm
- 2. Motion Sensor:** (Disabled by default) If a motion sensor T-Stat is used, the controller can enter night setback if no motion has been detected in the space for a specified period of time (default: 4 hours).
- 3. Contact Closure:** (Disabled by default) Connecting the two contact closure inputs together using a dry contact will cause the controller to enter night setback. The controller will exit night setback once the contacts are released.
- 4. T-Stat Button:** The T-Stat button allows the user to exit night setback. Pressing any button on the T-Stat will cause the controller to exit night setback for the override time period. (default: 4 hours). Occupancy override by T-Stat button is always enabled and cannot be disabled.

CONTROL GRAPH - FDV8



Sequence of Operation -- FAN POWERED VARIABLE VOLUME PARALLEL FLOW - PIC CONTROLLER - NIGHT SETBACK

During night setback, the controller will respond to its night heat setpoint and its night cool setpoint.

While the room temperature is between the two night setpoints, by default the controller will maintain the damper position at 40% open. All outputs (Fan, Heat, etc.) will go to their OFF or IDLE states.

Room temperature below Night Heat Setpoint:

Fan Operation: On a decrease in space temperature into the heating proportional band, the unit fan will energize.

Reheat Operation: On a decrease in space temperature into the heating proportional band, the reheat outputs (if used) are energized proportionally.

Cool supply air: On a decrease in space temperature the controller regulates the actuator to close the VAV damper and reduce the flow of cool air. The airflow is maintained at the pre-selected minimum setting.

Warm supply air: On a decrease in space temperature the controller regulates the actuator to open the VAV damper and increase the flow of warm air. On a decrease of space temperature greater than the heating proportional band, the airflow is maintained at its pre-selected maximum setting.

Room temperature above Night Cool Setpoint:

Fan Operation: On an increase in space temperature into the cooling proportional band, the unit fan typically will not energize. It is possible to configure the controller to energize the fan if using cooling coils.

Cooling Output Operation: On an increase in space temperature into the cooling proportional band, the cooling outputs (if used) are energized proportionally.

Cool supply air: On an increase in space temperature the controller regulates the actuator to open the VAV damper and increase the flow of cool air. On an increase of space temperature greater than the cooling proportional band, the airflow is maintained at its pre-selected maximum setting.

Warm supply air: On an increase in space temperature the controller regulates the actuator to close the VAV damper and reduce the flow of warm air. The airflow is maintained at the pre-selected minimum setting.

PROJECT:

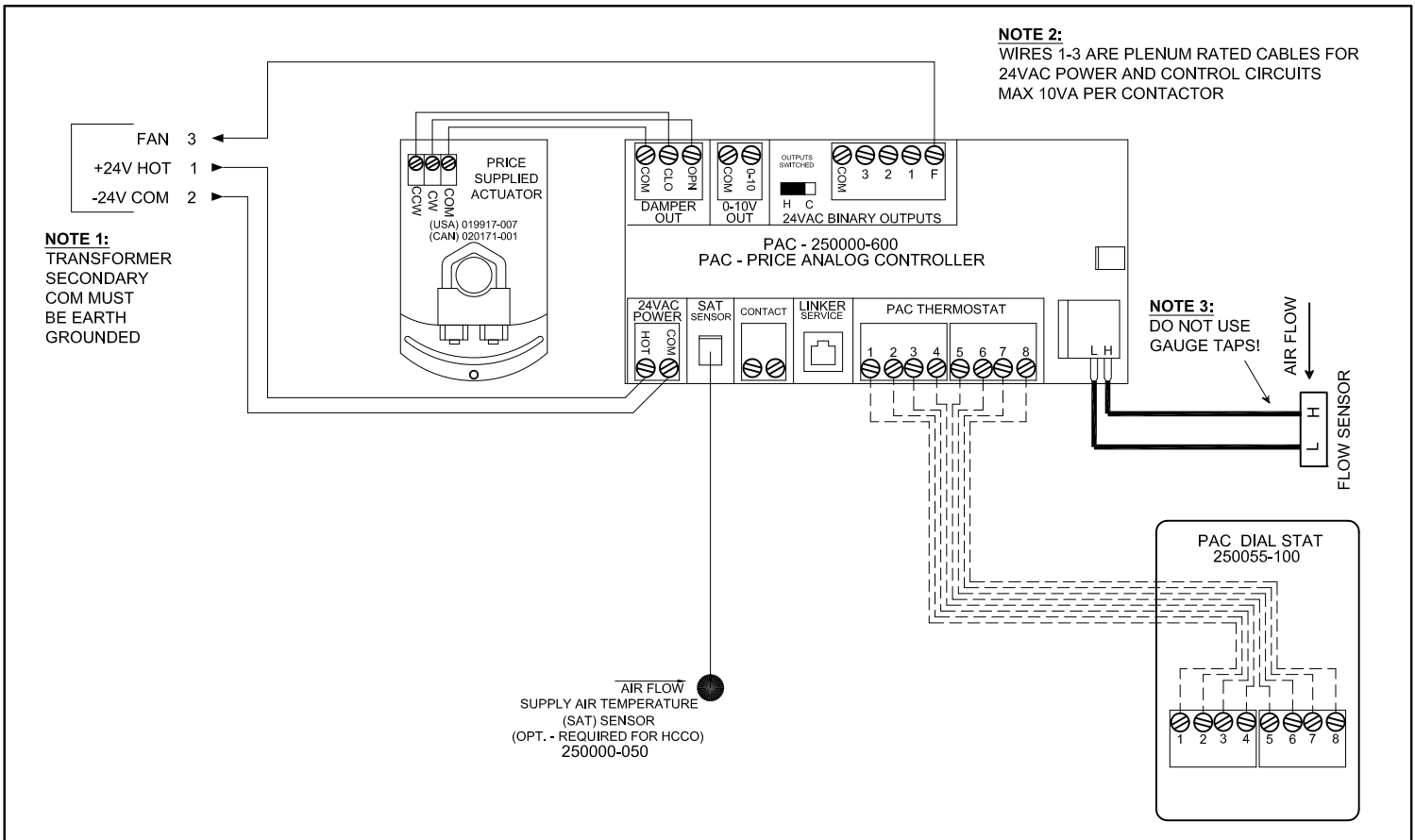
ENGINEER:

CUSTOMER:

SUBMITTAL DATE:

SPEC. SYMBOL:

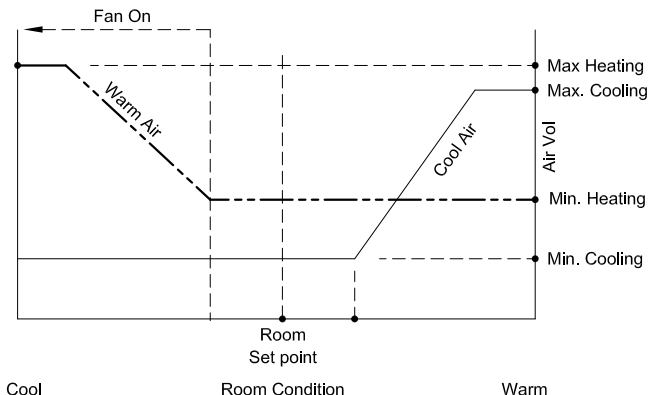
	FAN POWERED PARALLEL FLOW NIGHT SETBACK SEQUENCE
269252	PIC - DDC CONTROLLER FDV8
2017/11/22	



LEGEND

- FACTORY FLOW SENSOR TUBING
- FACTORY ELECTRICAL WIRING
- FIELD ELECTRICAL WIRING

CONTROL GRAPH



Sequence of Operation -- Variable Volume Heat/cool changeover OR cooling only - Pressure Independent

On power up the damper will calibrate closed for 2 minutes.

****If no SAT sensor is present, controller assumes Cool supply air at all times****

Cool supply air: On an increase in space temperature the controller regulates the actuator to open the VAV damper and increase the flow of cool air. On an increase of space temperature greater than the cooling proportional band, the airflow is maintained at its pre-selected maximum flow setting.

On a decrease in space temperature the controller regulates the actuator to close the VAV damper and reduce the flow of cool air. If the space temperature decreases to less than the cooling proportional band, the airflow is maintained at the pre-selected minimum flow setting.

Warm supply air: On a decrease in space temperature the controller regulates the actuator to open the VAV damper and increase the flow of warm air. On a decrease of space temperature greater than the heating proportional band, the airflow is maintained at its pre-selected maximum flow setting.

On an increase in space temperature the controller regulates the actuator to close the VAV damper and reduce the flow of warm air. If the space temperature increases above the heating proportional band, the airflow is maintained at the pre-selected minimum flow setting.

Fan Operation: On a decrease in space temperature into the heating proportional band, the unit fan will energize.

PROJECT:

ENGINEER:

CUSTOMER:

SUBMITTAL DATE:

SPEC. SYMBOL:

KR/mm

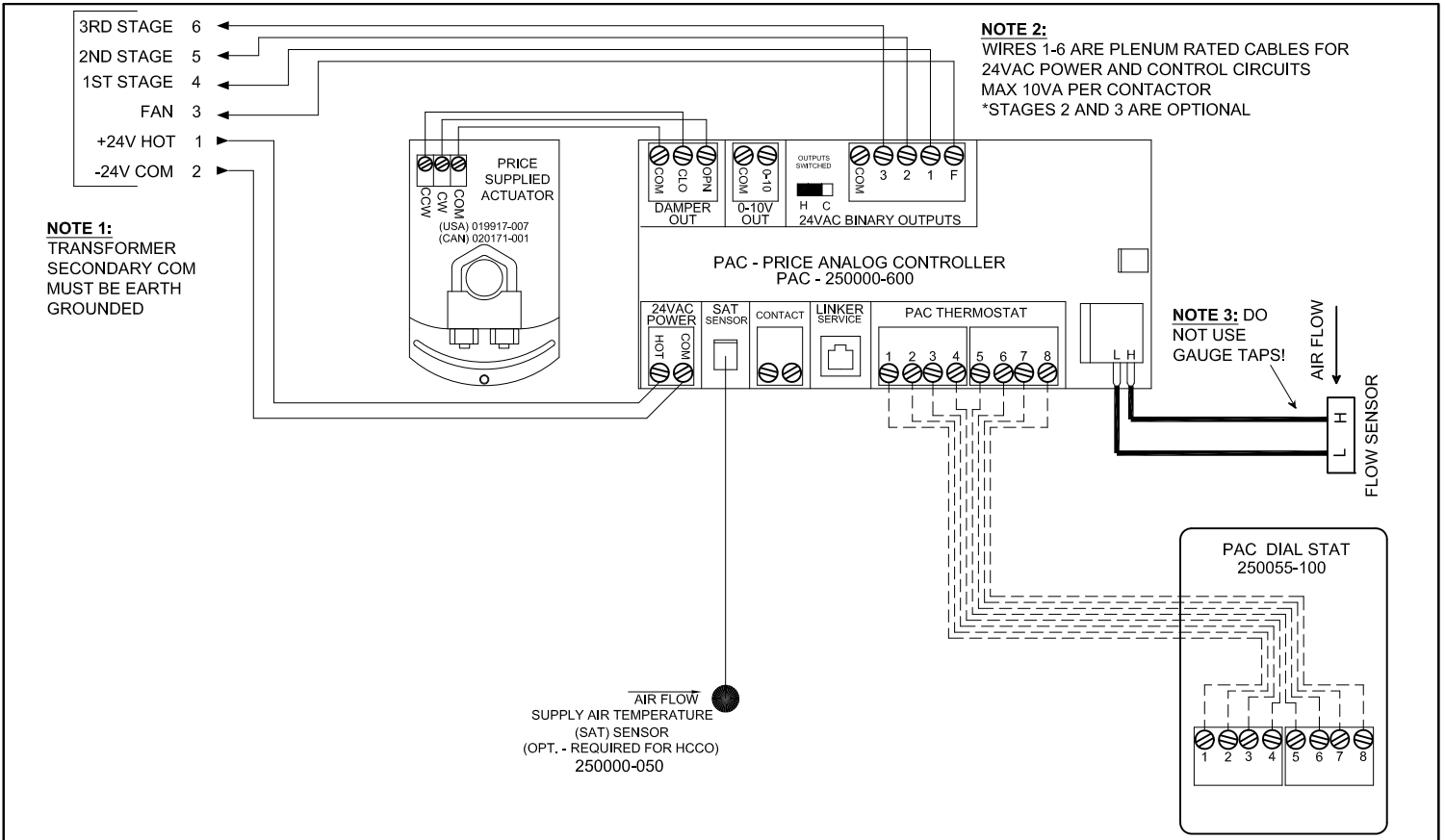
254838

2012/11/13



**FAN POWERED
PAC**

V.V. PRESSURE INDEPENDENT
HEAT/COOL CHANGEOVER
OR COOLING ONLY
NO LOCAL REHEAT CONTROL



Calibration note: Suitable min and max heating flows must be selected in order to maintain flow through energized electric coils of at least 200 fpm and at least 70 cfm/kW throughout the entire operating range.

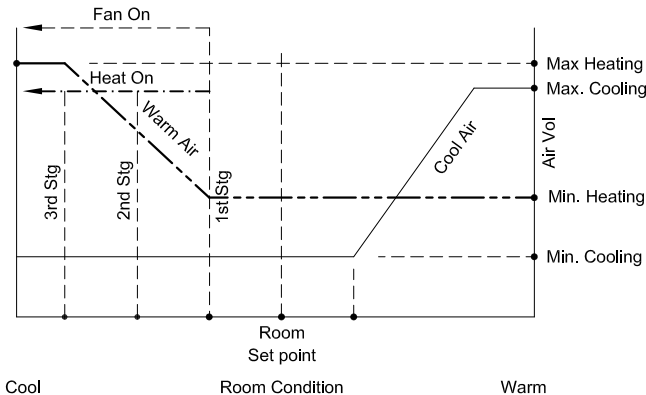
Sequence of Operation – Variable Volume Heat/cool changeover OR cooling With up to 3 stage binary reheat - Pressure Independent

On power up the damper will calibrate closed for 2 minutes.
If no SAT sensor is present, controller assumes Cool supply air at all times

LEGEND

- FACTORY FLOW SENSOR TUBING
- FACTORY ELECTRICAL WIRING
- - - - - FIELD ELECTRICAL WIRING

CONTROL GRAPH



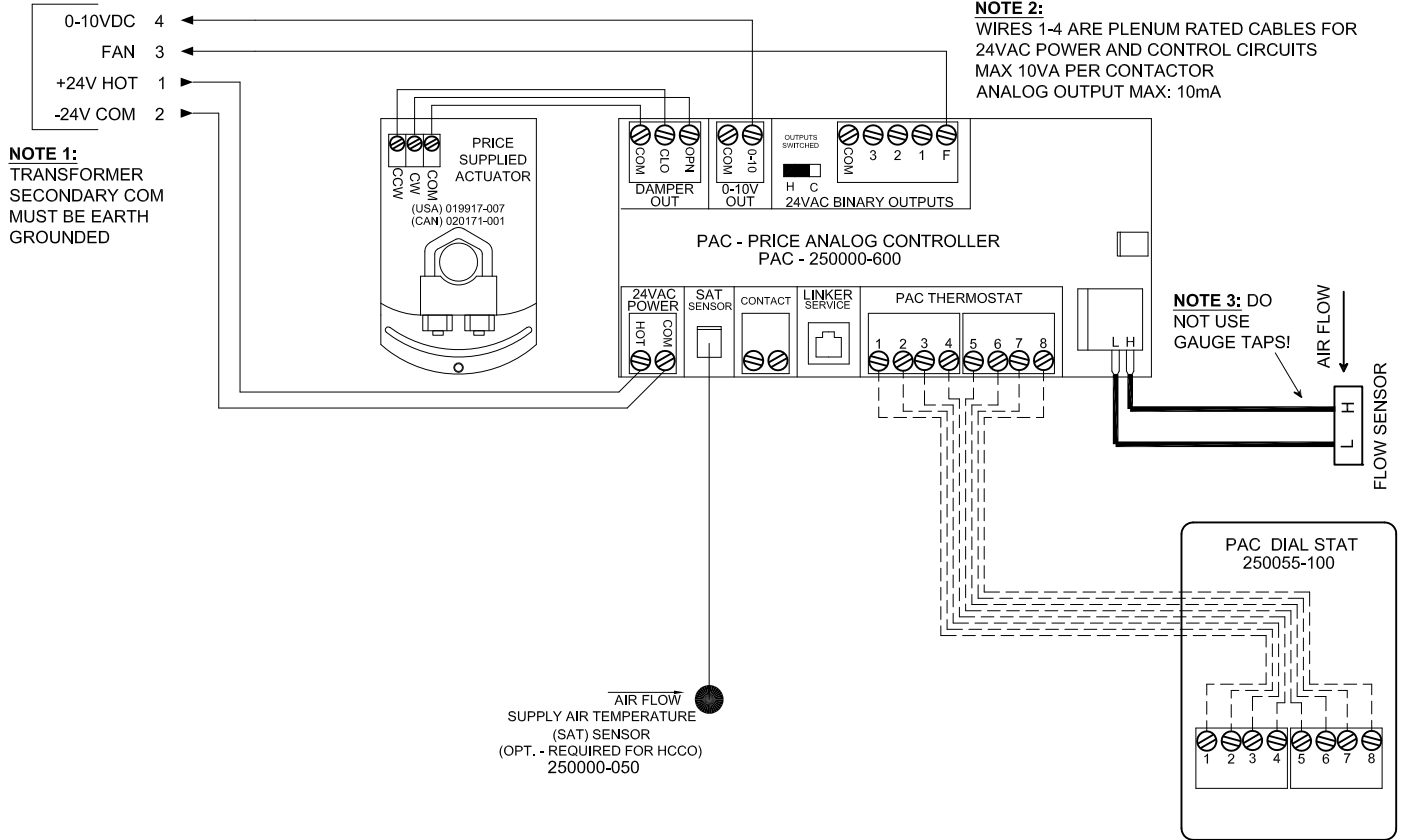
Cool supply air: On an increase in space temperature the controller regulates the actuator to open the VAV damper and increase the flow of cool air. On an increase of space temperature greater than the cooling proportional band, the airflow is maintained at its pre-selected maximum flow setting. On a decrease in space temperature the controller regulates the actuator to close the VAV damper and reduce the flow of cool air. If the space temperature decreases to less than the cooling proportional band, the airflow is maintained at its pre-selected minimum flow setting.

Warm supply air: On a decrease in space temperature the controller regulates the actuator to open the VAV damper and increase the flow of warm air. On a decrease of space temperature greater than the heating proportional band, the airflow is maintained at its pre-selected maximum flow setting. On an increase in space temperature the controller regulates the actuator to close the VAV damper and reduce the flow of warm air. If the space temperature increases above the heating proportional band, the airflow is maintained at its pre-selected minimum flow setting.

Fan Operation: On a decrease in space temperature into the heating proportional band, the unit fan will energize.

Reheat Operation: On a decrease in space temperature into the heating proportional band, the 1st stage binary 24VAC reheat output will energize. Upon further decreases, the 2nd then 3rd stages of reheat (if used) will energize.

PROJECT:		PRICE [®]
ENGINEER:		
CUSTOMER:		KR/mm 254839
SUBMITTAL DATE:	SPEC. SYMBOL:	2012/11/13

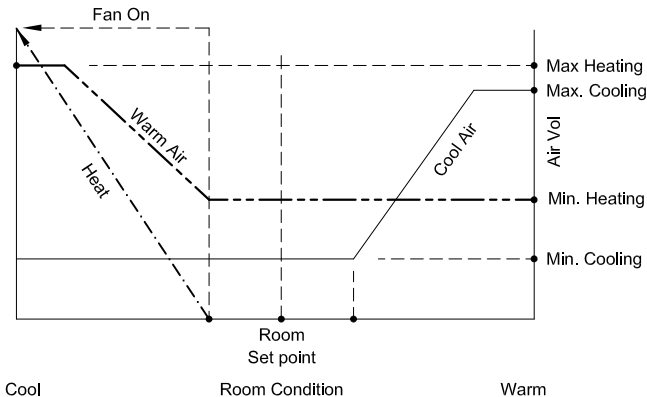


Calibration note: Suitable min and max heating flows must be selected in order to maintain flow through energized electric coils of at least 200 fpm and at least 70 cfm/kW throughout the entire operating range.

LEGEND

- FACTORY FLOW SENSOR TUBING
- FACTORY ELECTRICAL WIRING
- FIELD ELECTRICAL WIRING

CONTROL GRAPH



Sequence of Operation – Variable Volume Heat/cool changeover OR Cooling With Analog modulating reheat - Pressure Independent

On power up the damper will calibrate closed for 2 minutes.
If no SAT sensor is present, controller assumes Cool supply air at all times

Cool supply air: On an increase in space temperature the controller regulates the actuator to open the VAV damper and increase the flow of cool air. On an increase of space temperature greater than the cooling proportional band, the airflow is maintained at its pre-selected maximum setting. On a decrease in space temperature the controller regulates the actuator to close the VAV damper and reduce the flow of cool air. If the space temperature decreases to less than the cooling proportional band, the airflow is maintained at the pre-selected minimum setting.

Warm supply air: On a decrease in space temperature the controller regulates the actuator to open the VAV damper and increase the flow of warm air. On a decrease of space temperature greater than the heating proportional band, the airflow is maintained at its pre-selected maximum setting. On an increase in space temperature the controller regulates the actuator to close the VAV damper and reduce the flow of warm air. If the space temperature increases above the heating proportional band, the airflow is maintained at the pre-selected minimum setting.

Fan Operation: On a decrease in space temperature into the heating proportional band, the unit fan will energize.

Reheat Operation: On a decrease in space temperature, the controller modulates the 0-10VDC output to increase heat proportionally to the room demand.

PROJECT:

ENGINEER:

CUSTOMER:

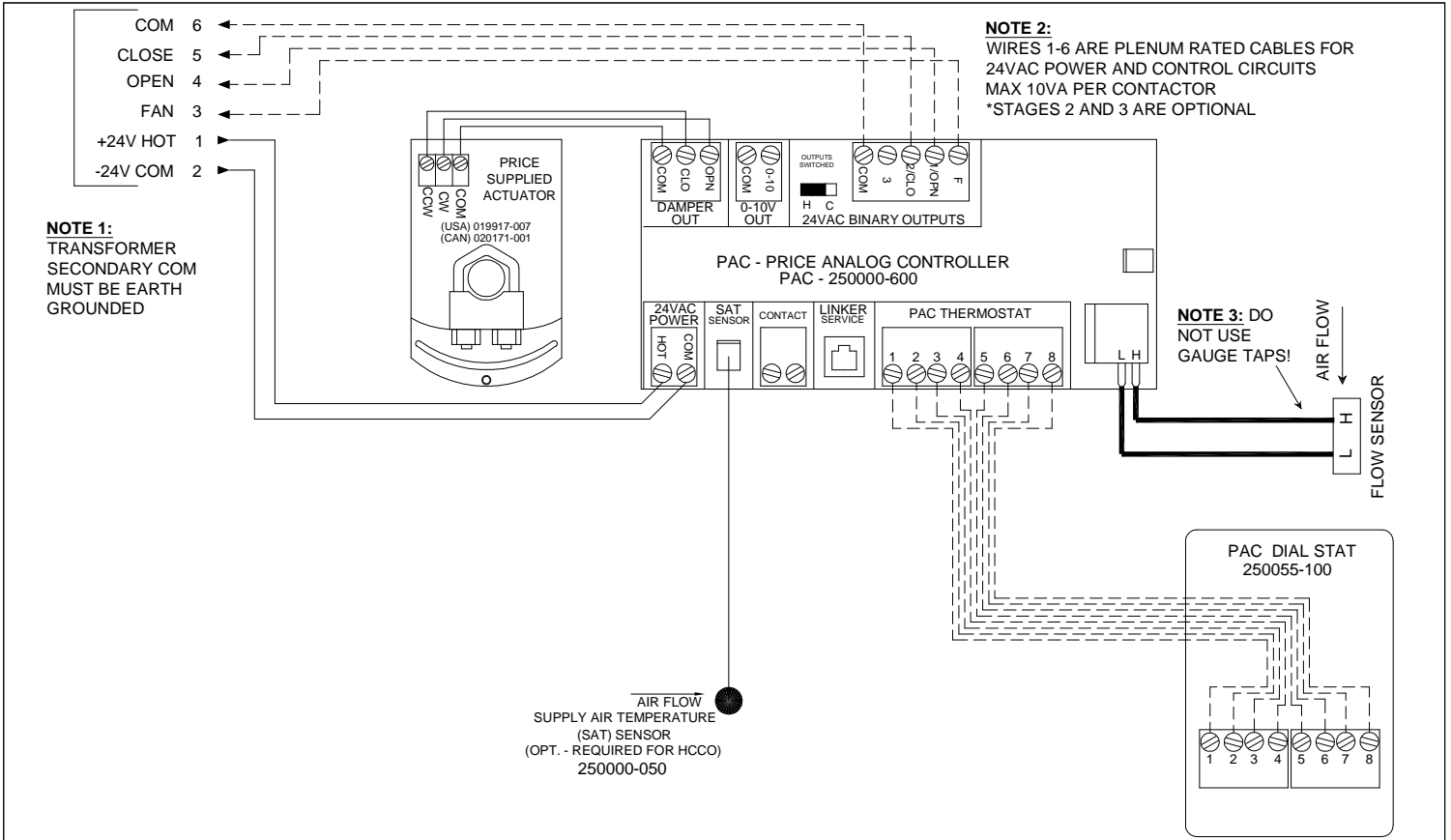
SUBMITTAL DATE:

SPEC. SYMBOL:

KR/mm

254840

2012/11/13



Calibration note: Suitable min and max heating flows must be selected in order to maintain flow through energized electric coils of at least 200 fpm and at least 70 cfm/kW throughout the entire operating range.

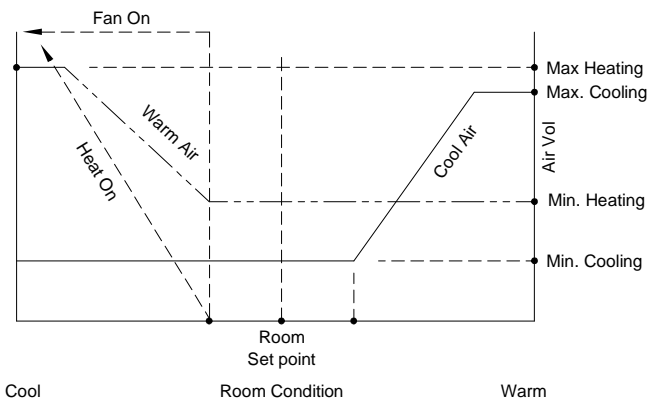
Sequence of Operation -- Variable Volume Heat/cool changeover OR cooling With up to 3 stage binary reheat - Pressure Independent

On power up the damper will calibrate closed for 2 minutes.
If no SAT sensor is present, controller assumes Cool supply air at all times

LEGEND

- FACTORY FLOW SENSOR TUBING
- FACTORY ELECTRICAL WIRING
- FIELD ELECTRICAL WIRING

CONTROL GRAPH



Cool supply air: On an increase in space temperature the controller regulates the actuator to open the VAV damper and increase the flow of cool air. On an increase of space temperature greater than the cooling proportional band, the airflow is maintained at its pre-selected maximum flow setting. On a decrease in space temperature the controller regulates the actuator to close the VAV damper and reduce the flow of cool air. If the space temperature decreases to less than the cooling proportional band, the airflow is maintained at its pre-selected minimum flow setting.

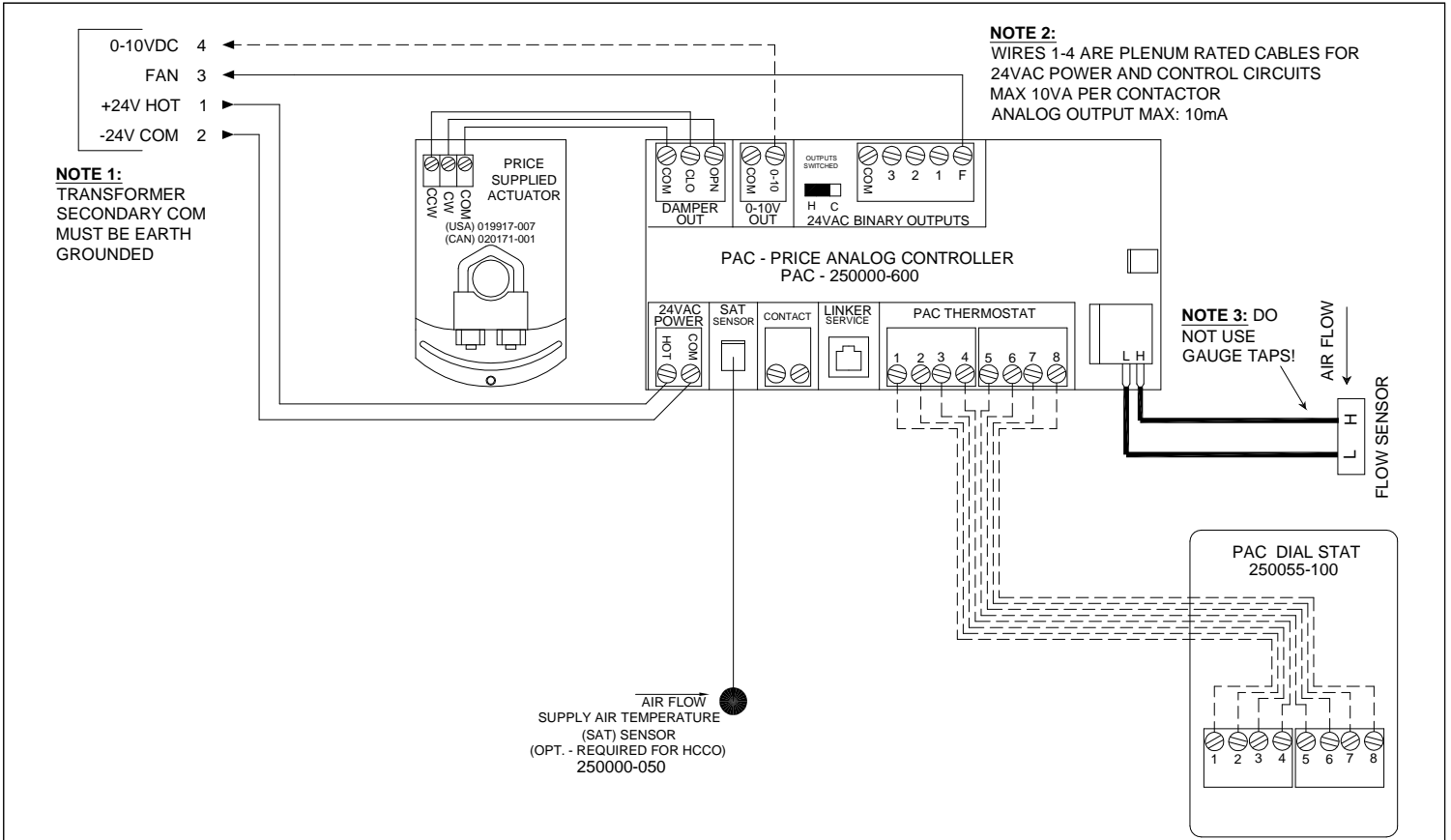
Warm supply air: On a decrease in space temperature the controller regulates the actuator to open the VAV damper and increase the flow of warm air. On a decrease of space temperature greater than the heating proportional band, the airflow is maintained at its pre-selected maximum flow setting.

On an increase in space temperature the controller regulates the actuator to close the VAV damper and reduce the flow of warm air. If the space temperature increases above the heating proportional band, the airflow is maintained at its pre-selected minimum flow setting.

Fan Operation: On a decrease in space temperature into the heating proportional band, the unit fan will energize.

Reheat Operation: On a decrease in space temperature into the heating proportional band, the HW valve is modulated to increase heat proportionally to room demand.

PROJECT:		PRICE [®]
ENGINEER:		
CUSTOMER:		GF mm
SUBMITTAL DATE:		264455
SPEC. SYMBOL:		2014/03/14
		FAN POWERED PAC V.V. PRESSURE INDEPENDENT HEAT/COOL C/O OR COOLING WITHFIELD WIRED TRI-STATE HW

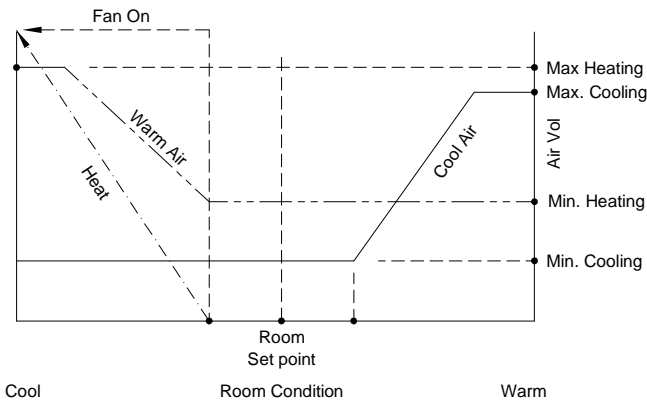


Calibration note: Suitable min and max heating flows must be selected in order to maintain flow through energized electric coils of at least 200 fpm and at least 70 cfm/kW throughout the entire operating range.

LEGEND

- FACTORY FLOW SENSOR TUBING
- FACTORY ELECTRICAL WIRING
- FIELD ELECTRICAL WIRING

CONTROL GRAPH



Sequence of Operation -- Variable Volume Heat/cool changeover OR Cooling With Analog modulating reheat - Pressure Independent

On power up the damper will calibrate closed for 2 minutes.
If no SAT sensor is present, controller assumes Cool supply air at all times

Cool supply air: On an increase in space temperature the controller regulates the actuator to open the VAV damper and increase the flow of cool air. On an increase of space temperature greater than the cooling proportional band, the airflow is maintained at its pre-selected maximum setting. On a decrease in space temperature the controller regulates the actuator to close the VAV damper and reduce the flow of cool air. If the space temperature decreases to less than the cooling proportional band, the airflow is maintained at the pre-selected minimum setting.

Warm supply air: On a decrease in space temperature the controller regulates the actuator to open the VAV damper and increase the flow of warm air. On a decrease of space temperature greater than the heating proportional band, the airflow is maintained at its pre-selected maximum setting.

On an increase in space temperature the controller regulates the actuator to close the VAV damper and reduce the flow of warm air. If the space temperature increases above the heating proportional band, the airflow is maintained at the pre-selected minimum setting.

Fan Operation: On a decrease in space temperature into the heating proportional band, the unit fan will energize.

Reheat Operation: On a decrease in space temperature, the controller modulates the 0-10VDC output to increase heat proportionally to the room demand.

PROJECT:



ENGINEER:

GF mm

CUSTOMER:

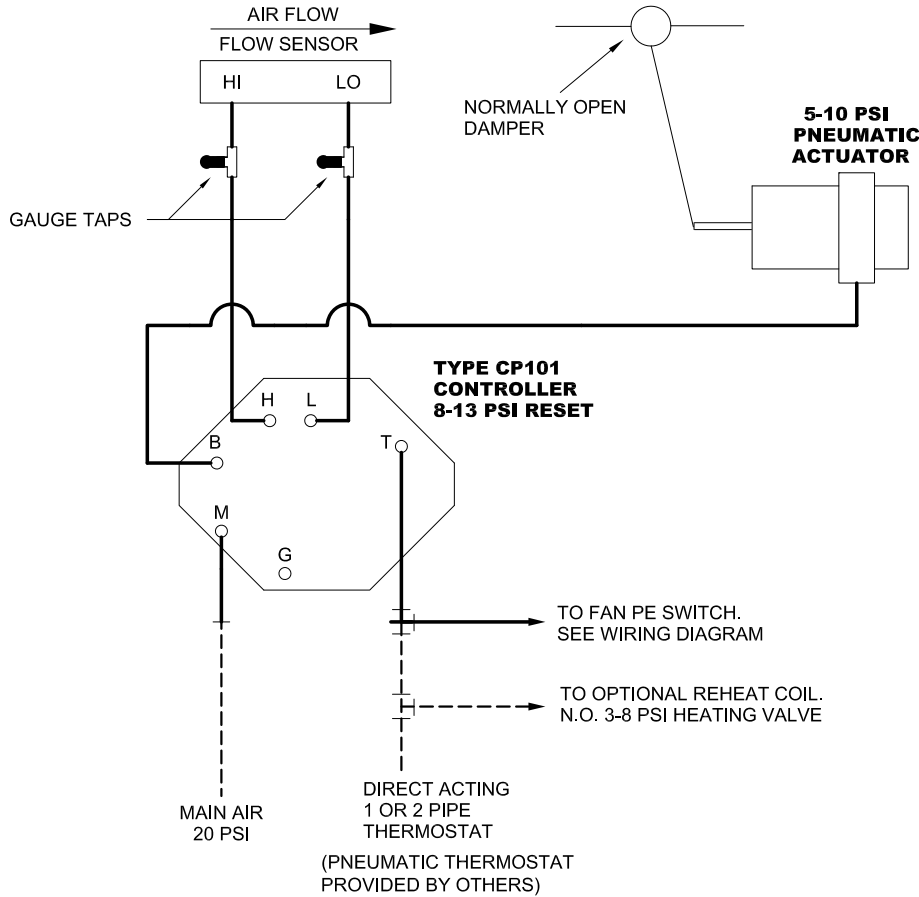
264456

SUBMITTAL DATE:

SPEC. SYMBOL:

2014/03/14

**FAN POWERED
PAC**
V.V. PRESSURE INDEPENDENT
HEAT/COOL C/O OR COOLING
WITH FIELD WIRED ANALOG HW



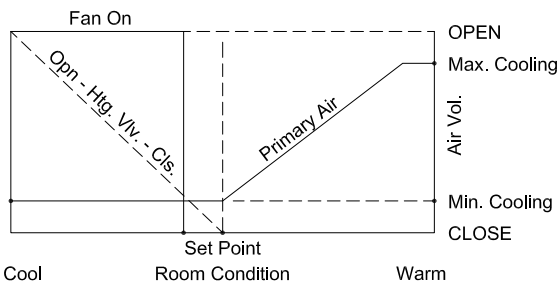
NOTES:

1. TOTAL AIR CONSUMPTION 0.017 SCFM.

LEGEND

- FACTORY PNEUMATIC TUBING
- FIELD PNEUMATIC TUBING

CONTROL GRAPH



Sequence of Operation – Variable volume, intermittent fan, pressure independent, normally open, direct acting cooling application. HW reheat coil is optional.

An increase in space temperature increases the thermostat output pressure. When the thermostat output increases to 13 psi or more, the VAV box damper is maintained at the preselected maximum flow setting.

A decrease in space temperature decreases the thermostat output pressure. When the thermostat output decreases to 8 psi or less, the VAV box damper is maintained at the preselected minimum flow setting.

At thermostat output pressures between 8 & 13 psi the VAV damper modulates between minimum & maximum cooling flow.

At thermostat output pressures below 8 psi the minimum flow setting is maintained, and the thermostat will energize the unit fan to provide recirculated air to the space. The thermostat may also control the optional reheat coil.

Airflow is held constant at any given thermostat output pressure regardless of changes in inlet duct static pressure.

Normally Open Damper: On failure of the main air supply the damper will fail to the open position.

PROJECT:

ENGINEER:

CUSTOMER:

SUBMITTAL DATE:

SPEC. SYMBOL:

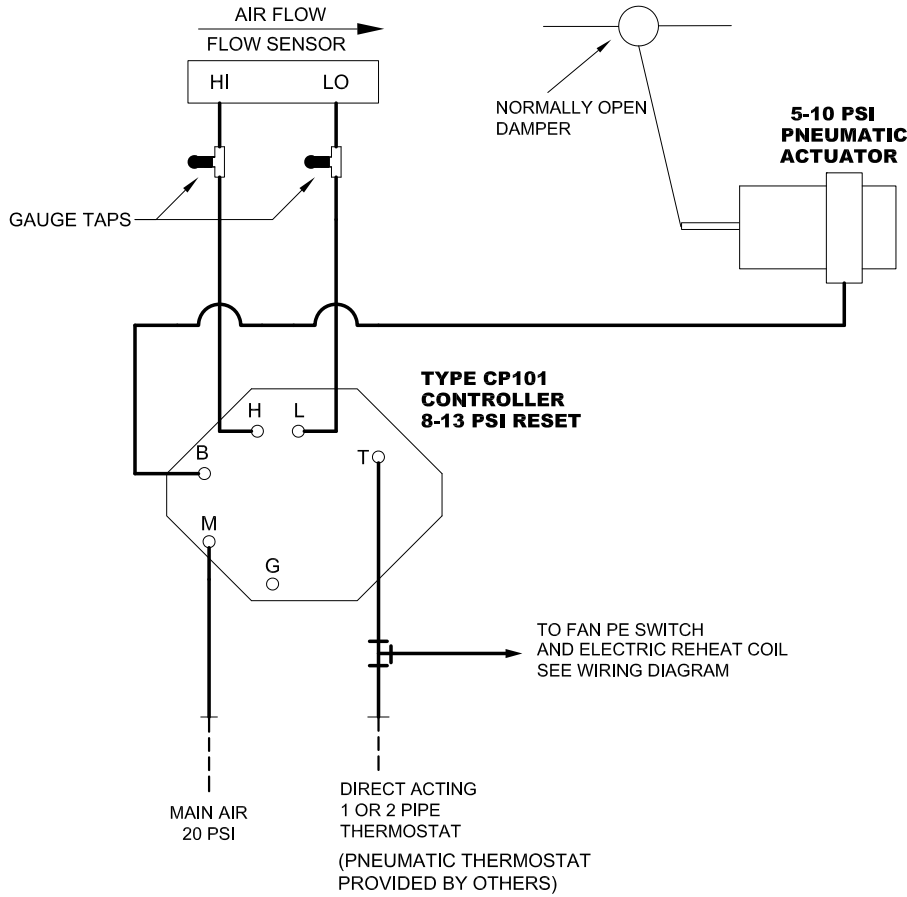


BTH/BL

231784

2011/11/07

FPV8 / FPVE8
Kreuter CP-101
Clg., HW Reheat Optional
Variable Vol., Intermittent Fan
Pressure Independent
D.A. T'Stat, N.O. Damper



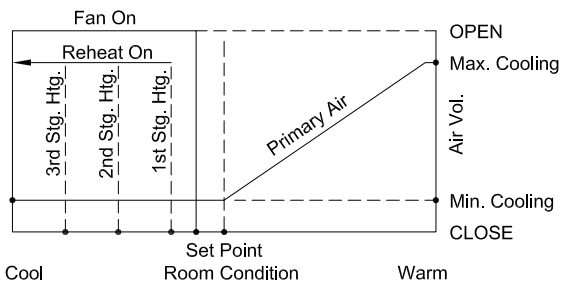
NOTES:

1. TOTAL AIR CONSUMPTION 0.017 SCFM.

LEGEND

————— FACTORY PNEUMATIC TUBING
----- FIELD PNEUMATIC TUBING

CONTROL GRAPH



Sequence of Operation -- Variable volume, intermittent fan, pressure independant, normally open, direct acting cooling application with electric reheat coil.

An increase in space temperature increases the thermostat output pressure. When the thermostat output increases to 13 psi or more, the VAV box damper is maintained at the preselected maximum flow setting.

A decrease in space temperature decreases the thermostat output pressure. When the thermostat output decreases to 8 psi or less, the VAV box damper is maintained at the preselected minimum flow setting.

At thermostat output pressures between 8 & 13 psi the VAV damper modulates between minimum & maximum cooling flow.

At thermostat output pressures below 8 psi the minimum flow setting is maintained, and the thermostat will energize the unit fan to provide recirculated air to the space. The thermostat will also control the electric reheat coil.

Airflow is held constant at any given thermostat output pressure regardless of changes in inlet duct static pressure.

Normally Open Damper: On failure of the main air supply the damper will fail to the open position.

PROJECT:



ENGINEER:

BTG/BC

CUSTOMER:

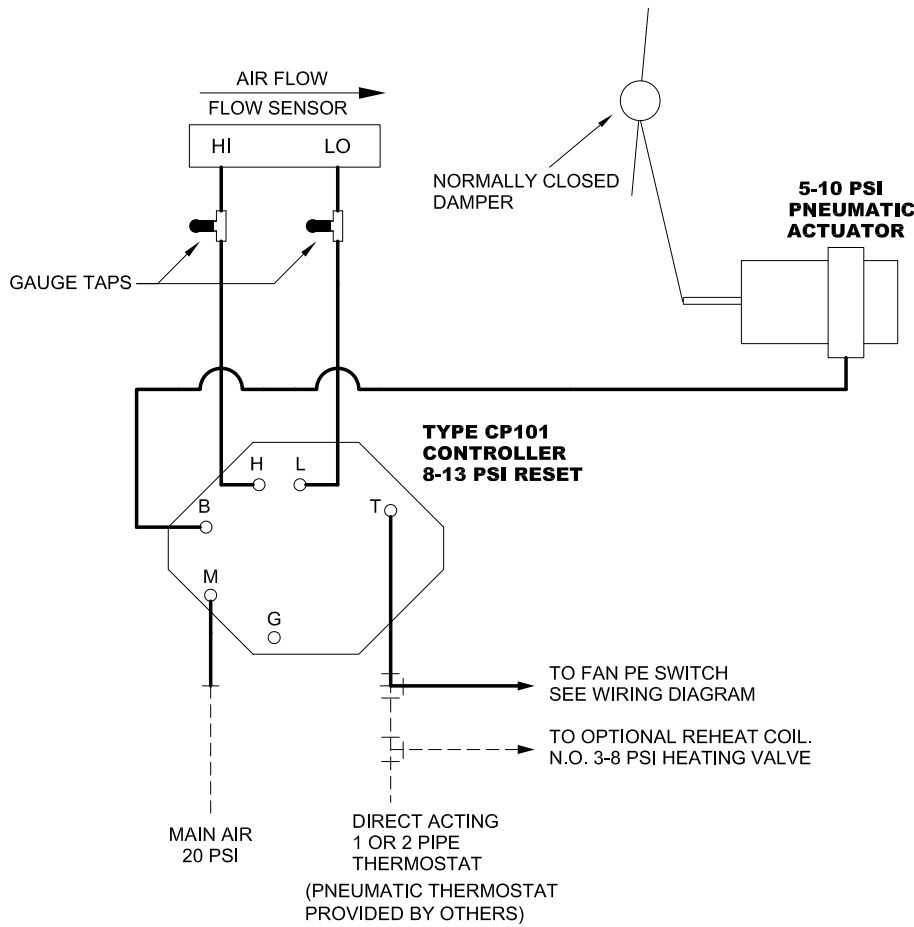
231785

SUBMITTAL DATE:

SPEC. SYMBOL:

2011/11/07

FPV8 / FPVE8
Kreuter CP-101
Clg., Electric Reheat Coil
Variable Vol., Intermittent Fan
Pressure Independent
D.A. T'Stat, N.O. Damper



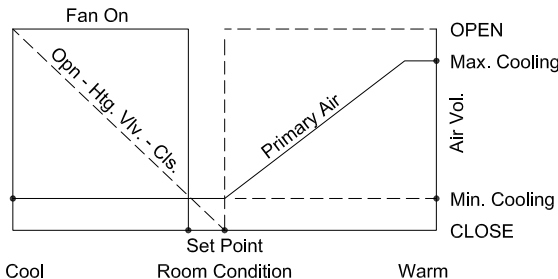
NOTES:

1. TOTAL AIR CONSUMPTION 0.017 SCFM.

LEGEND

————— FACTORY PNEUMATIC TUBING
 - - - - - FIELD PNEUMATIC TUBING

CONTROL GRAPH



Sequence of Operation -- Variable volume, intermittent fan, pressure independent, normally closed, direct acting cooling application. HW reheat coil is optional.

An increase in space temperature increases the thermostat output pressure. When the thermostat output increases to 13 psi or more, the VAV box damper is maintained at the pre-selected maximum flow setting.
 A decrease in space temperature decreases the thermostat output pressure. When the thermostat output decreases to 8 psi or less, the VAV box damper is maintained at the pre-selected minimum flow setting.
 At thermostat output pressures between 8 & 13 psi the VAV damper modulates between minimum & maximum cooling flow.
 At thermostat output pressures below 8 psi the minimum flow setting is maintained, and the thermostat will energize the unit fan to provide recirculated air to the space. The thermostat may also control the optional reheat coil.
 Airflow is held constant at any given thermostat output pressure regardless of changes in inlet duct static pressure.
Normally Closed Damper: On failure of the main air supply the damper will fail to the closed position.

PROJECT:

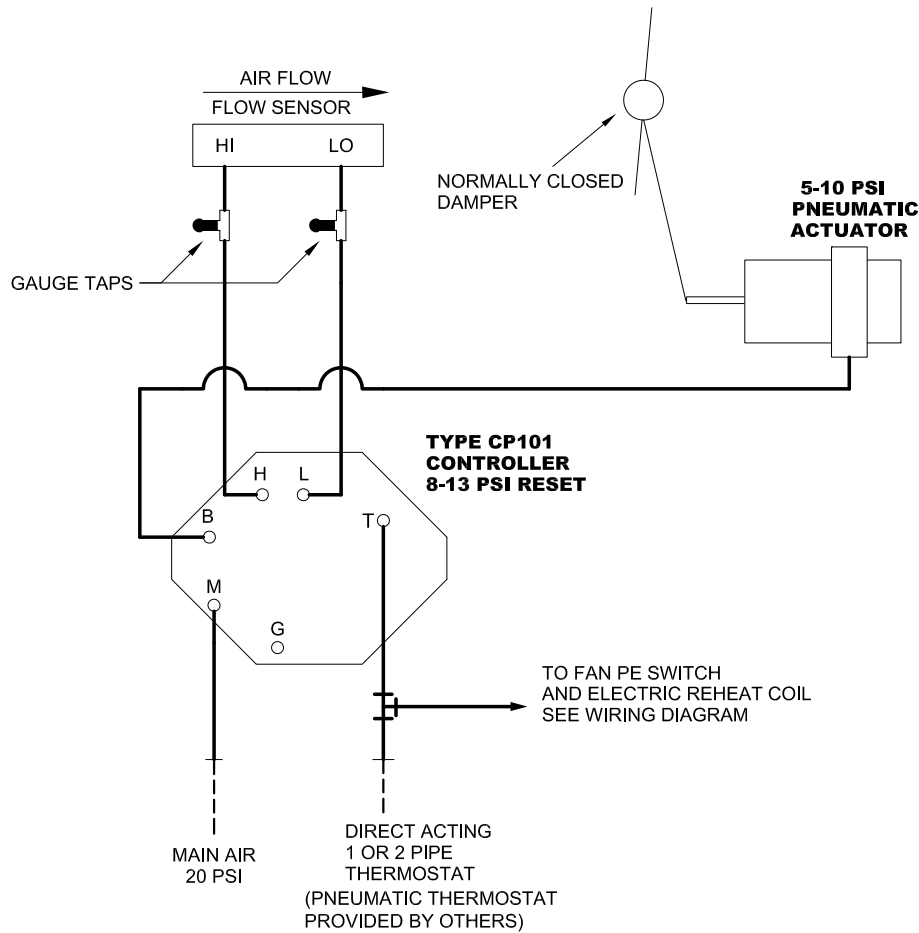
ENGINEER:

CUSTOMER:

SUBMITTAL DATE:

SPEC. SYMBOL:

PRICE [®]	
b76/30	FPV8 / FPVE8 Kreuter CP-101
231786	Clg., HW Reheat Optional Variable Vol., Intermittent Fan
2011/11/07	Pressure Independent D.A. T'Stat, N.C. Damper



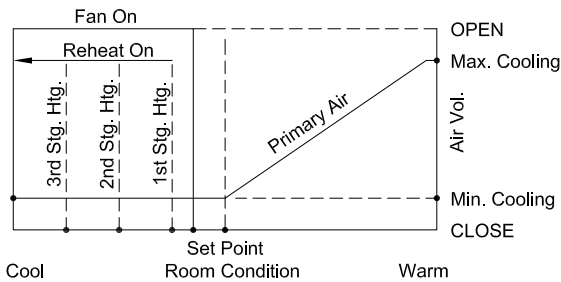
NOTES:

1. TOTAL AIR CONSUMPTION 0.017 SCFM.

LEGEND

- FACTORY PNEUMATIC TUBING
- FIELD PNEUMATIC TUBING

CONTROL GRAPH



Sequence of Operation -- Variable volume, intermittent fan, pressure independent, normally closed, direct acting cooling application with electric reheat coil.

An increase in space temperature increases the thermostat output pressure. When the thermostat output increases to 13 psi or more, the VAV box damper is maintained at the preselected maximum flow setting.

A decrease in space temperature decreases the thermostat output pressure. When the thermostat output decreases to 8 psi or less, the VAV box damper is maintained at the preselected minimum flow setting.

At thermostat output pressures between 8 & 13 psi the VAV damper modulates between minimum & maximum cooling flow.

At thermostat output pressures below 8 psi the minimum flow setting is maintained, and the thermostat will energize the unit fan to provide recirculated air to the space. The thermostat will also control the electric reheat coil.

Airflow is held constant at any given thermostat output pressure regardless of changes in inlet duct static pressure.

Normally Closed Damper: On failure of the main air supply the damper will fail to the closed position.

PROJECT:



ENGINEER:

BTG/BC

CUSTOMER:

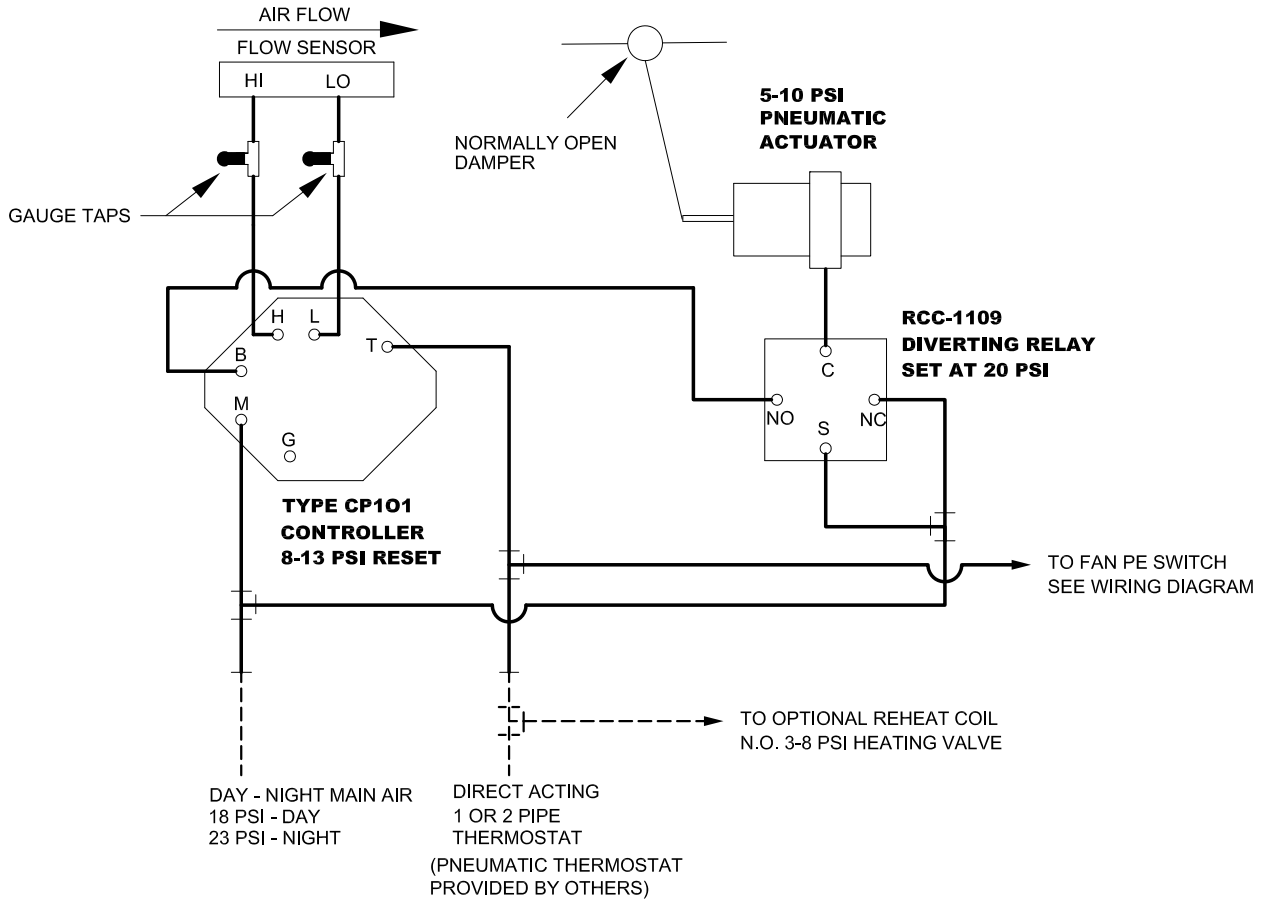
231787

SUBMITTAL DATE:

SPEC. SYMBOL:

2011/11/07

FPV8 / FPVE8
Kreuter CP-101
Clg., Electric Reheat Coil
Variable Vol., Intermittent Fan
Pressure Independent
D.A. T'Stat, N.C. Damper



NOTES:

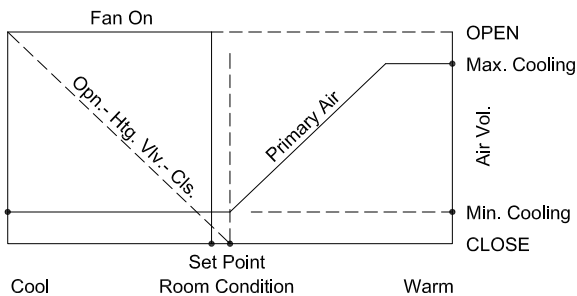
1. TOTAL AIR CONSUMPTION 0.017 SCFM.

LEGEND

———— FACTORY PNEUMATIC TUBING

----- FIELD PNEUMATIC TUBING

CONTROL GRAPH



Sequence of Operation -- Variable volume, intermittent fan, pressure independent, normally open, direct acting cooling application with day-night fan control, and primary damper close-off at night. HW reheat coil is optional.

Day Operation: Occurs when the main air supply is at 18 psi or lower. An increase in space temperature increases the thermostat output pressure. When the thermostat output increases to 13 psi or more, the VAV box damper is maintained at the pre-selected maximum flow setting.

A decrease in space temperature decreases the thermostat output pressure. When the thermostat output decreases to 8 psi, the VAV box damper is maintained at the pre-selected minimum flow setting. At thermostat output pressures below 8 psi, the minimum flow setting is maintained, and the thermostat will energize the unit fan to provide recirculated air to the space. The thermostat may also control an optional reheat coil.

Airflow is held constant at any given thermostat output pressure regardless of changes in inlet duct static pressure.

Night Operation: Occurs when the main air supply is at 23 psi or higher. The VAV damper is held in the closed position. The thermostat will control the unit fan and optional reheat coil as described above to maintain the thermostat setting.

Normally Open Damper: On failure of the main air supply the damper will fail to the open position.

PROJECT:

ENGINEER:

CUSTOMER:

SUBMITTAL DATE:

SPEC. SYMBOL:

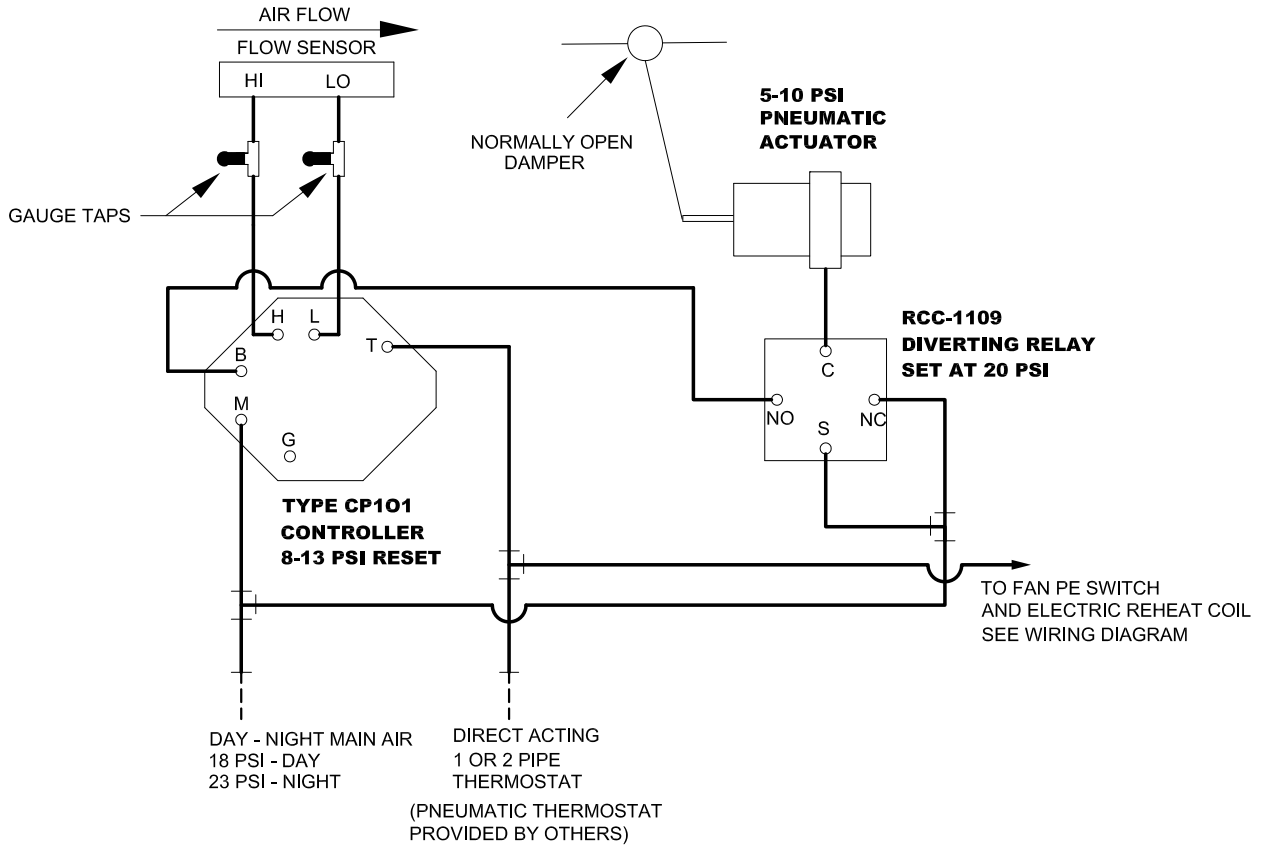


BTG/BL

231788

2011/11/07

FPV8 / FPVE8
Kreuter CP-101
Clg., HW Reheat Optional
Variable Vol., Day - Night Main
Pressure Independent
D.A. T'Stat, N.O. Damper



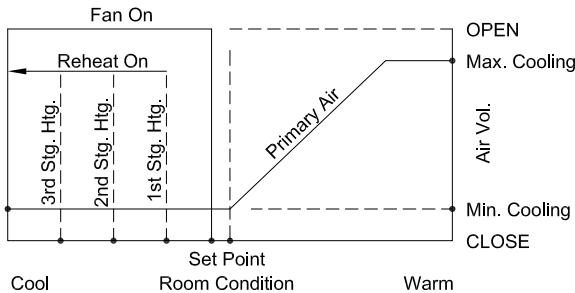
NOTES:

1. TOTAL AIR CONSUMPTION 0.017 SCFM.

LEGEND

- FACTORY PNEUMATIC TUBING
- - - - - FIELD PNEUMATIC TUBING

CONTROL GRAPH



Sequence of Operation -- Variable volume, intermittent fan, pressure independent, normally open, direct acting cooling application with electric reheat coil, day-night fan control, and primary damper close-off at night.

Day Operation: Occurs when the main air supply is at 18 psi or lower. An increase in space temperature increases the thermostat output pressure. When the thermostat output increases to 13 psi or more, the VAV box damper is maintained at the pre-selected maximum flow setting. A decrease in space temperature decreases the thermostat output pressure. When the thermostat output decreases to 8 psi, the VAV box damper is maintained at the pre-selected minimum flow setting. At thermostat output pressures below 8 psi, the minimum flow setting is maintained, and the thermostat will energize the unit fan to provide recirculated air to the space. The thermostat will also control an electric reheat coil. Airflow is held constant at any given thermostat output pressure regardless of changes in inlet duct static pressure.

Night Operation: Occurs when the main air supply is at 23 psi or higher. The VAV damper is held in the closed position. The thermostat will control the unit fan and optional reheat coil as described above to maintain the thermostat setting.

Normally Open Damper: On failure of the main air supply the damper will fail to the open position.

PROJECT:

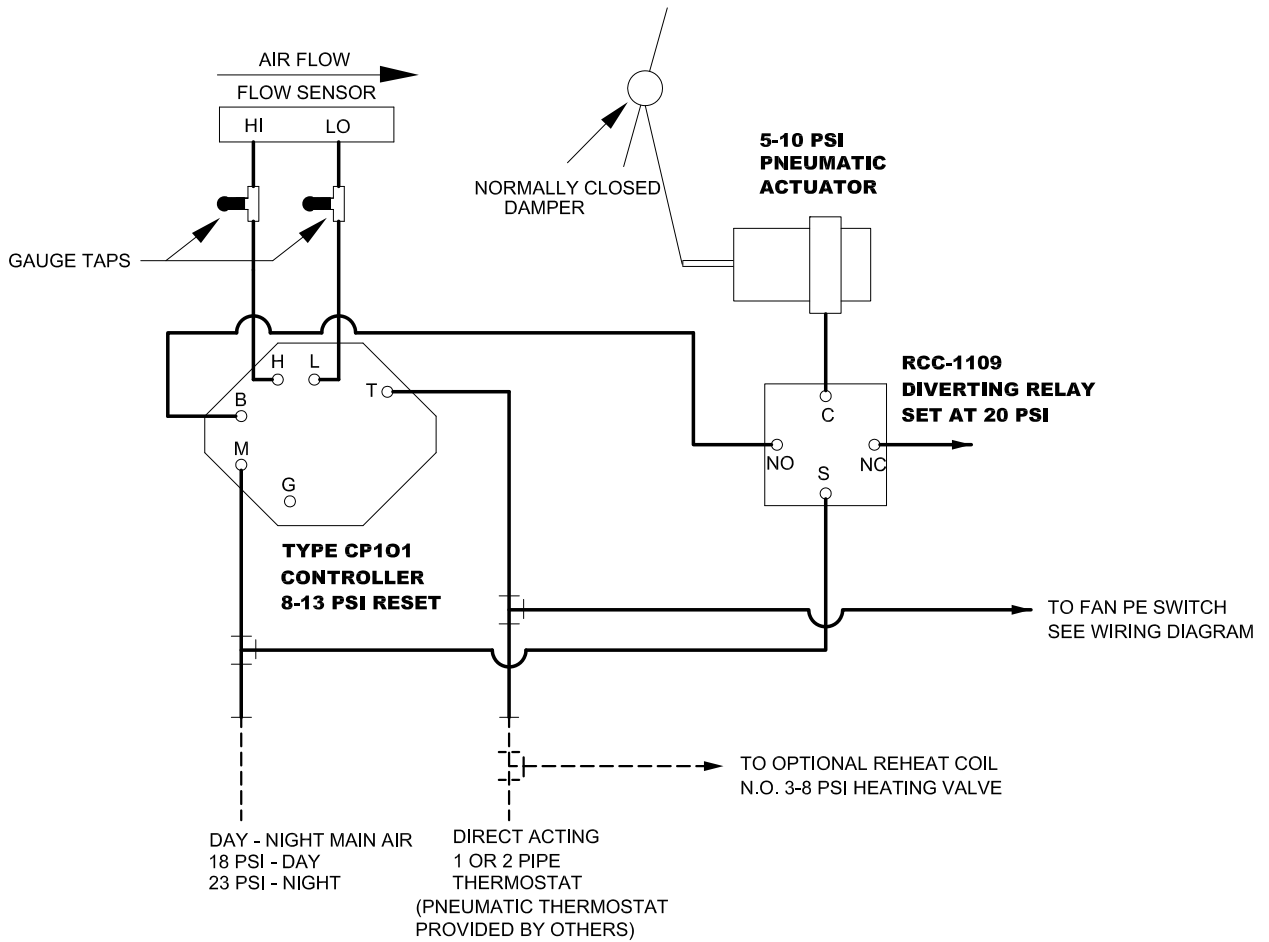
ENGINEER:

CUSTOMER:

SUBMITTAL DATE:

SPEC. SYMBOL:

PRICE [®]	
BTG/BC	FPV8 / FPVE8 Kreuter CP-101 Clg., Electric Reheat Coil Variable Vol., Day - Night Main Pressure Independent D.A. T'Stat, N.O. Damper
231789	
2011/11/07	



NOTES:

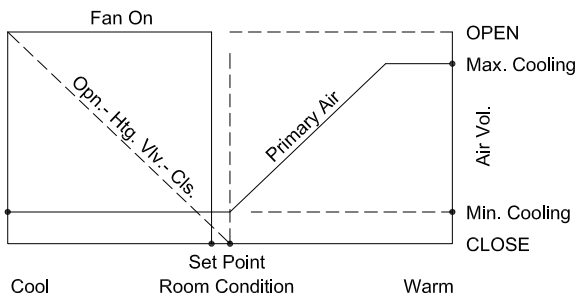
1. TOTAL AIR CONSUMPTION 0.017 SCFM.

LEGEND

————— FACTORY PNEUMATIC TUBING

- - - - - FIELD PNEUMATIC TUBING

CONTROL GRAPH



Sequence of Operation -- Variable volume, intermittent fan, pressure independent, normally closed, direct acting cooling application with day-night fan control, and primary damper close-off at night. HW reheat coil is optional.

Day Operation: Occurs when the main air supply is at 18 psi or lower. An increase in space temperature increases the thermostat output pressure. When the thermostat output increases to 13 psi or more, the VAV box damper is maintained at the pre-selected maximum flow setting.

A decrease in space temperature decreases the thermostat output pressure. When the thermostat output decreases to 8 psi, the VAV box damper is maintained at the pre-selected minimum flow setting. At thermostat output pressures below 8 psi, the minimum flow setting is maintained, and the thermostat will energize the unit fan to provide recirculated air to the space. The thermostat may also control an optional reheat coil.

Airflow is held constant at any given thermostat output pressure between 8-13 psi regardless of changes in inlet duct static pressure.

Night Operation: Occurs when the main air supply is at 23 psi or higher. The VAV damper is held in the closed position. The thermostat will control the unit fan and optional reheat coil as described above to maintain the thermostat setting.

Normally Closed Damper: On failure of the main air supply the damper will fail to the closed position.

PROJECT:

ENGINEER:

CUSTOMER:

SUBMITTAL DATE:

SPEC. SYMBOL:

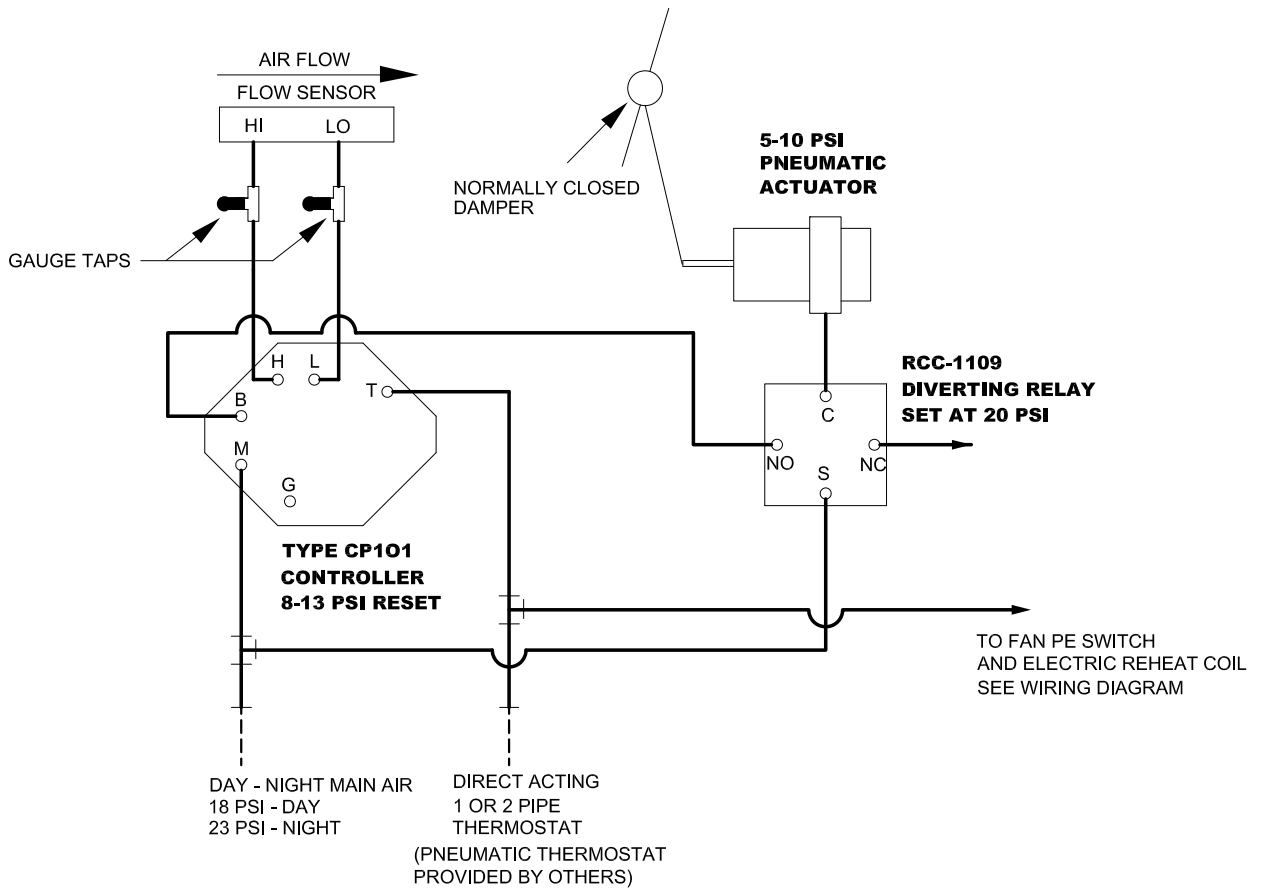


BTG/BC

231790

2011/11/07

FPV8 / FPVE8
Kreuter CP-101
Clg., HW Reheat Optional
Variable Vol., Day - Night Main
Pressure Independent
D.A. T'Stat, N.C. Damper



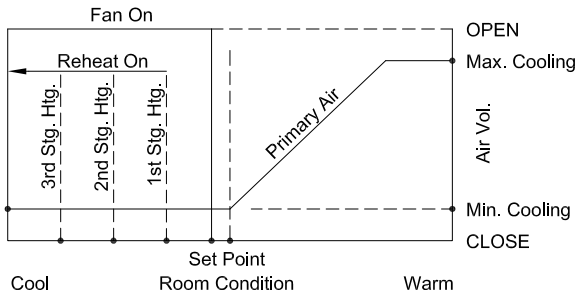
NOTES:

1. TOTAL AIR CONSUMPTION 0.017 SCFM.

LEGEND

- FACTORY PNEUMATIC TUBING
- - - - - FIELD PNEUMATIC TUBING

CONTROL GRAPH



Sequence of Operation -- Variable volume, intermittent fan, pressure independent, normally closed, direct acting cooling application with electric reheat coil, day-night fan control, and primary damper close-off at night.

Day Operation: Occurs when the main air supply is at 18 psi or lower. An increase in space temperature increases the thermostat output pressure. When the thermostat output increases to 13 psi or more, the VAV box damper is maintained at the pre-selected maximum flow setting. A decrease in space temperature decreases the thermostat output pressure. When the thermostat output decreases to 8 psi, the VAV box damper is maintained at the pre-selected minimum flow setting. At thermostat output pressures below 8 psi, the minimum flow setting is maintained, and the thermostat will energize the unit fan to provide recirculated air to the space. The thermostat will also control an electric reheat coil.

Airflow is held constant at any given thermostat output pressure between 8-13 psi regardless of changes in inlet duct static pressure.

Night Operation: Occurs when the main air supply is at 23 psi or higher. The VAV damper is held in the closed position. The thermostat will control the unit fan and optional reheat coil as described above to maintain the thermostat setting.

Normally Closed Damper: On failure of the main air supply the damper will fail to the closed position.

PROJECT:

ENGINEER:

CUSTOMER:

SUBMITTAL DATE:

SPEC. SYMBOL:

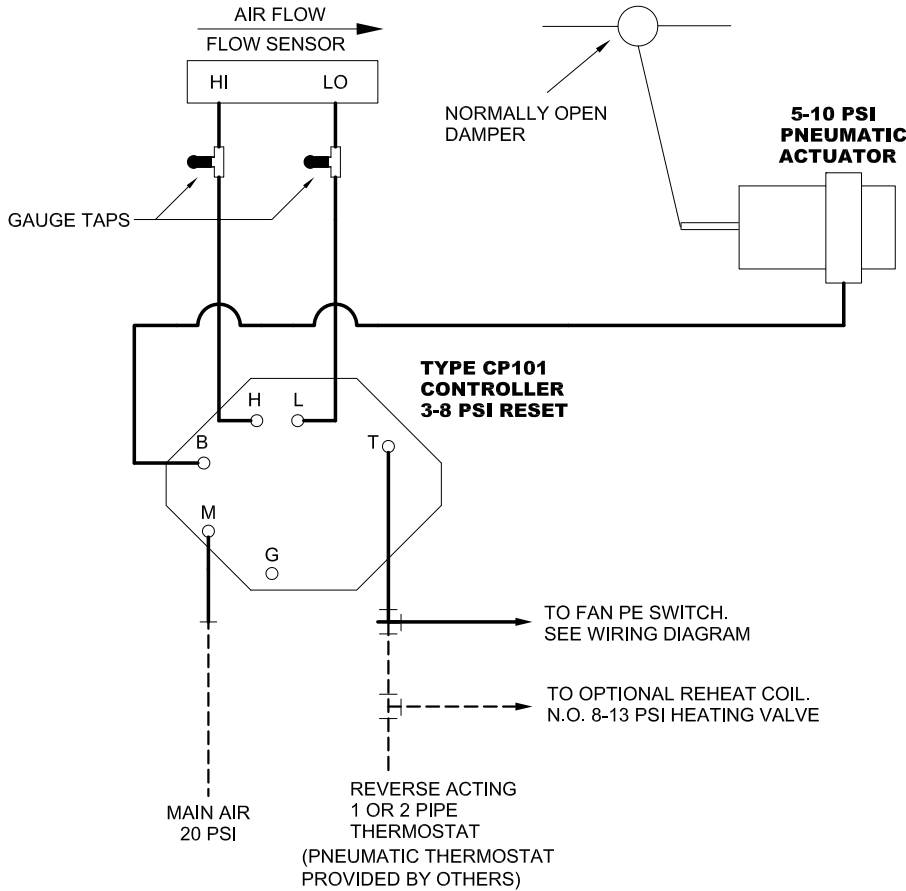


BTG/BL

231791

2011/11/07

FPV8 / FPVE8
Kreuter CP-101
Clg., Electric Reheat Coil
Variable Vol., Day - Night Main
Pressure Independent
D.A. T'Stat, N.C. Damper



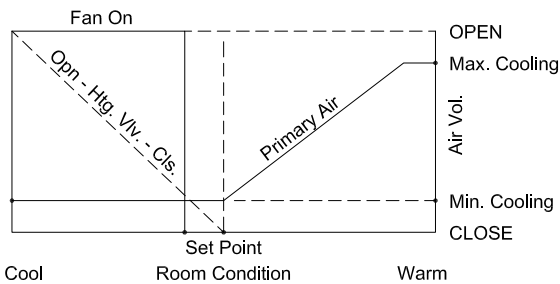
NOTES:

1. TOTAL AIR CONSUMPTION 0.017 SCFM.

LEGEND

- FACTORY PNEUMATIC TUBING
- - - - - FIELD PNEUMATIC TUBING

CONTROL GRAPH



Sequence of Operation -- Variable volume, intermittent fan, pressure independant, normally open, reverse acting cooling application. HW reheat coil is optional.

An increase in space temperature decreases the thermostat output pressure. When the thermostat output decreases to 3 psi or less, the VAV box damper is maintained at the preselected maximum flow setting.

An increase in space temperature decreases the thermostat output pressure. When the thermostat output decreases to 3 psi or less, the VAV box damper is maintained at the preselected maximum flow setting.

A decrease in space temperature increases the thermostat output pressure. When the thermostat output increases to 8 psi or more, the VAV box damper is maintained at the preselected minimum flow setting.

At thermostat output pressures between 3 & 8 psi the VAV damper modulates between minimum & maximum cooling flow.

At thermostat output pressures above 8 psi the minimum flow setting is maintained, and the thermostat will energize the unit fan to provide recirculated air to the space. The thermostat may also control the optional reheat coil.

Airflow is held constant at any given thermostat output pressure regardless of changes in inlet duct static pressure.

Normally Open Damper: On failure of the main air supply the damper will fail to the open position.

PROJECT:



ENGINEER:

BTH/BL

CUSTOMER:

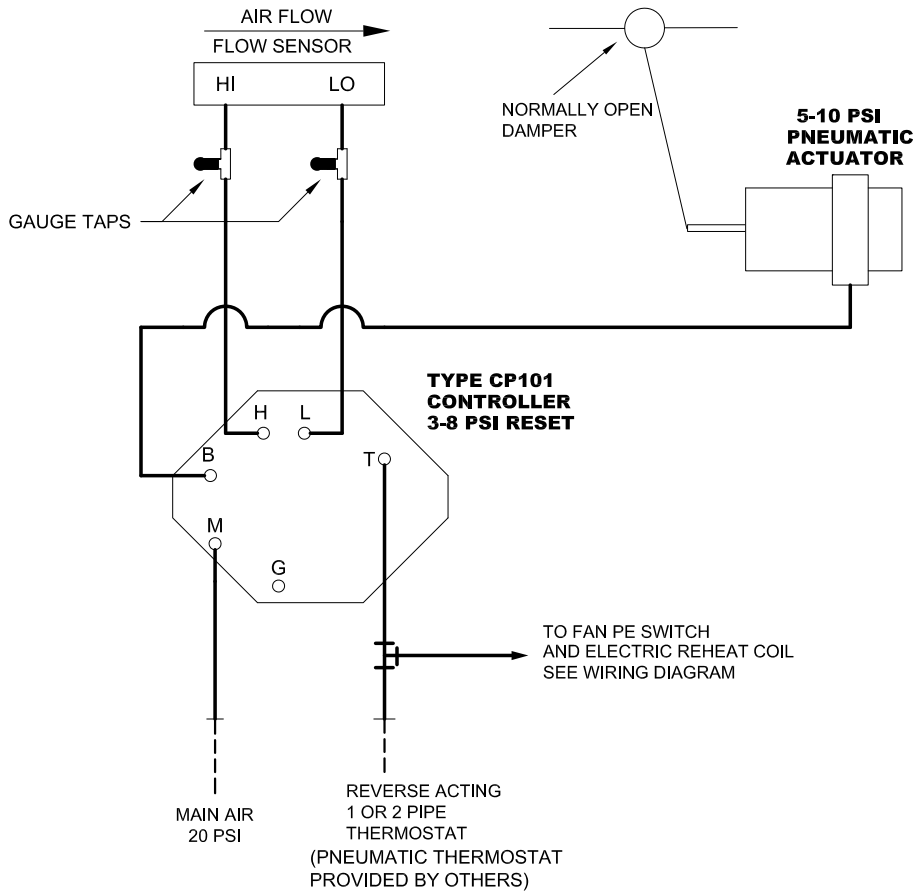
231794

SUBMITTAL DATE:

SPEC. SYMBOL:

2011/11/07

FPV8 / FPVE8
Kreuter CP-101
Clg., HW Reheat Optional
Variable Vol., Intermittent Fan
Pressure Independent
R.A. T'Stat, N.O. Damper



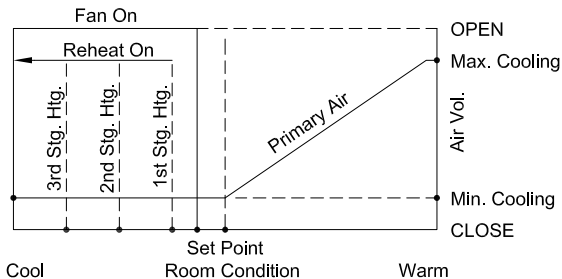
NOTES:

1. TOTAL AIR CONSUMPTION 0.017 SCFM.

LEGEND

————— FACTORY PNEUMATIC TUBING
 - - - - - FIELD PNEUMATIC TUBING

CONTROL GRAPH



Sequence of Operation -- Variable volume, intermittent fan, pressure independent, normally open, reverse acting cooling application with electric reheat coil.

An increase in space temperature decreases the thermostat output pressure. When the thermostat output decreases to 3 psi or less, the VAV box damper is maintained at the pre-selected maximum flow setting. A decrease in space temperature increases the thermostat output pressure. When the thermostat output increases to 8 psi or more, the VAV box damper is maintained at the pre-selected minimum flow setting. At thermostat output pressures between 3 & 8 psi the VAV damper modulates between minimum & maximum cooling flow.

At thermostat output pressures above 8 psi the minimum flow setting is maintained, and the thermostat will energize the unit fan to provide recirculated air to the space. The thermostat will also control the electric reheat coil.

Airflow is held constant at any given thermostat output pressure regardless of changes in inlet duct static pressure.

Normally Open Damper: On failure of the main air supply the damper will fail to the open position.

PROJECT:



ENGINEER:

BTH/BL

CUSTOMER:

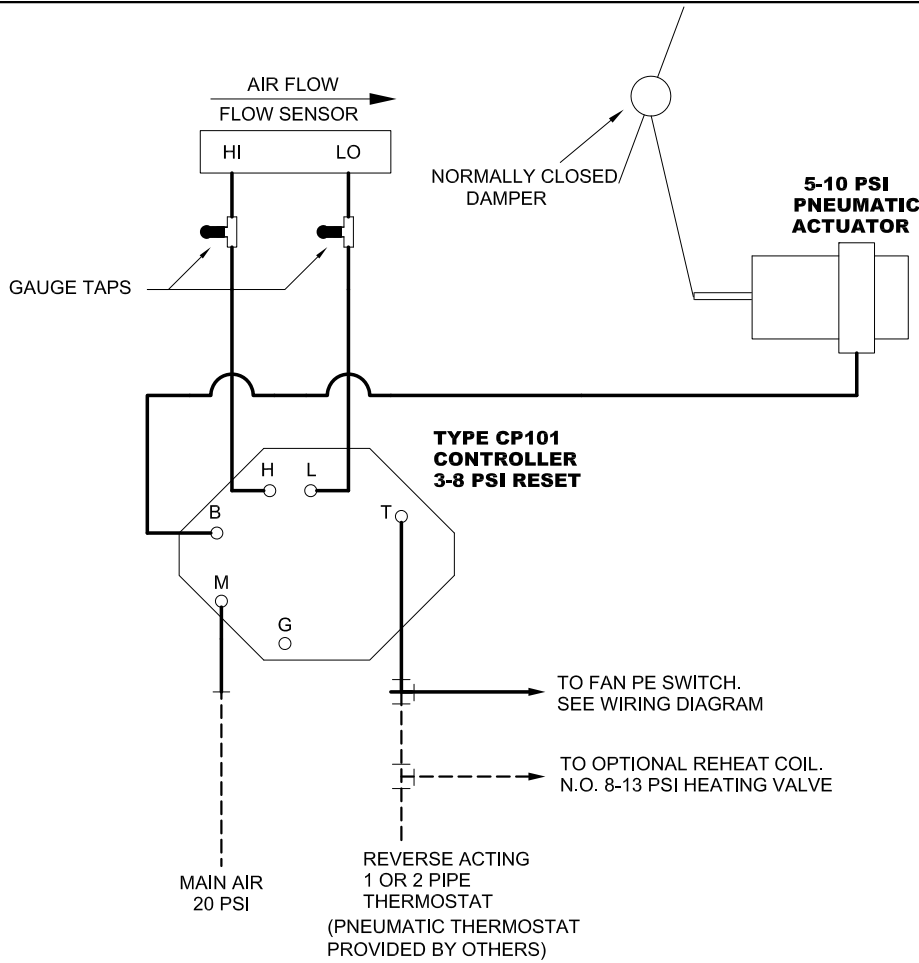
231795

SUBMITTAL DATE:

SPEC. SYMBOL:

2011/11/07

FPV8 / FPVE8
 Kreuter CP-101
 Clg., Electric Reheat Coil
 Variable Vol., Intermittent Fan
 Pressure Independent
 R.A. T'Stat, N.O. Damper



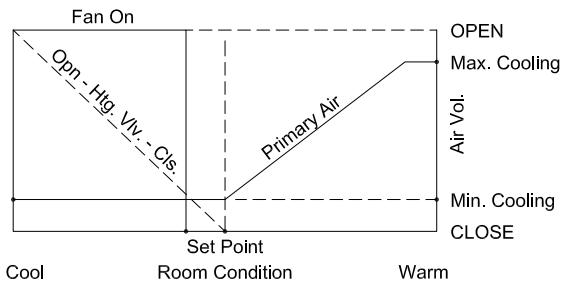
NOTES:

1. TOTAL AIR CONSUMPTION 0.017 SCFM.

LEGEND

- FACTORY PNEUMATIC TUBING
- - - - - FIELD PNEUMATIC TUBING

CONTROL GRAPH



Sequence of Operation -- Variable volume, intermittent fan, pressure independant, normally closed, reverse acting cooling application. HW reheat coil is optional.

An increase in space temperature decreases the thermostat output pressure. When the thermostat output decreases to 3 psi or less, the VAV box damper is maintained at the pre-selected maximum flow setting.

A decrease in space temperature increases the thermostat output pressure. When the thermostat output increases to 8 psi or more, the VAV box damper is maintained at the pre-selected minimum flow setting.

At thermostat output pressures between 3 & 8 psi the VAV damper modulates between minimum & maximum cooling flow.

At thermostat output pressures above 8 psi the minimum flow setting is maintained, and the thermostat will energize the unit fan to provide recirculated air to the space. The thermostat may also control the optional reheat coil.

Airflow is held constant at any given thermostat output pressure regardless of changes in inlet duct static pressure.

Normally Closed Damper: On failure of the main air supply the damper will fail to the closed position.

PROJECT:



ENGINEER:

BTG/BL

CUSTOMER:

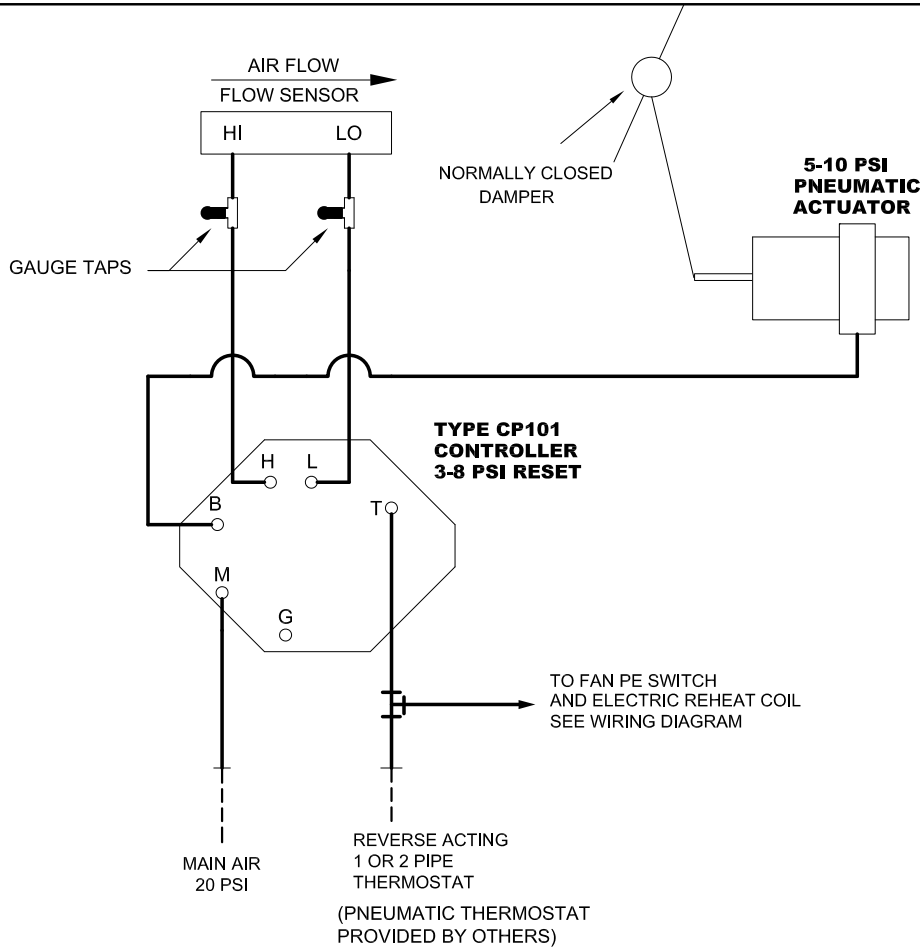
231796

SUBMITTAL DATE:

SPEC. SYMBOL:

2011/11/07

FPV8 / FPVE8
Kreuter CP-101
Clg., HW Reheat Optional
Variable Vol., Intermittent Fan
Pressure Independent
R.A. T'Stat, N.C. Damper



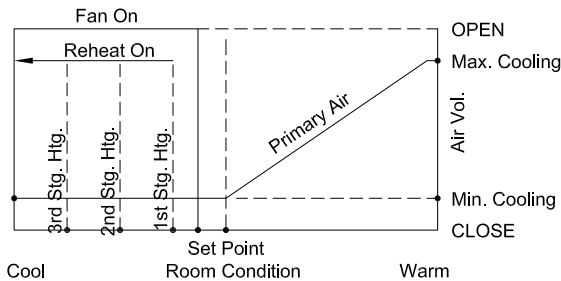
NOTES:

1. TOTAL AIR CONSUMPTION 0.017 SCFM.

LEGEND

————— FACTORY PNEUMATIC TUBING
 - - - - - FIELD PNEUMATIC TUBING

CONTROL GRAPH



Sequence of Operation -- Variable volume, intermittent fan, pressure independant, normally closed, reverse acting cooling application with electric reheat coil.

An increase in space temperature decreases the thermostat output pressure. When the thermostat output decreases to 3 psi or less, the VAV box damper is maintained at the preselected maximum flow setting. A decrease in space temperature increases the thermostat output pressure. When the thermostat output increases to 8 psi or more, the VAV box damper is maintained at the preselected minimum flow setting. At thermostat output pressures between 3 & 8 psi the VAV damper modulates between minimum & maximum cooling flow.

At thermostat output pressures above 8 psi the minimum flow setting is maintained, and the thermostat will energize the unit fan to provide recirculated air to the space. The thermostat will also control the electric reheat coil.

Airflow is held constant at any given thermostat output pressure regardless of changes in inlet duct static pressure.

Normally Closed Damper: On failure of the main air supply the damper will fail to the closed position.

PROJECT:

ENGINEER:

CUSTOMER:

SUBMITTAL DATE:

SPEC. SYMBOL:

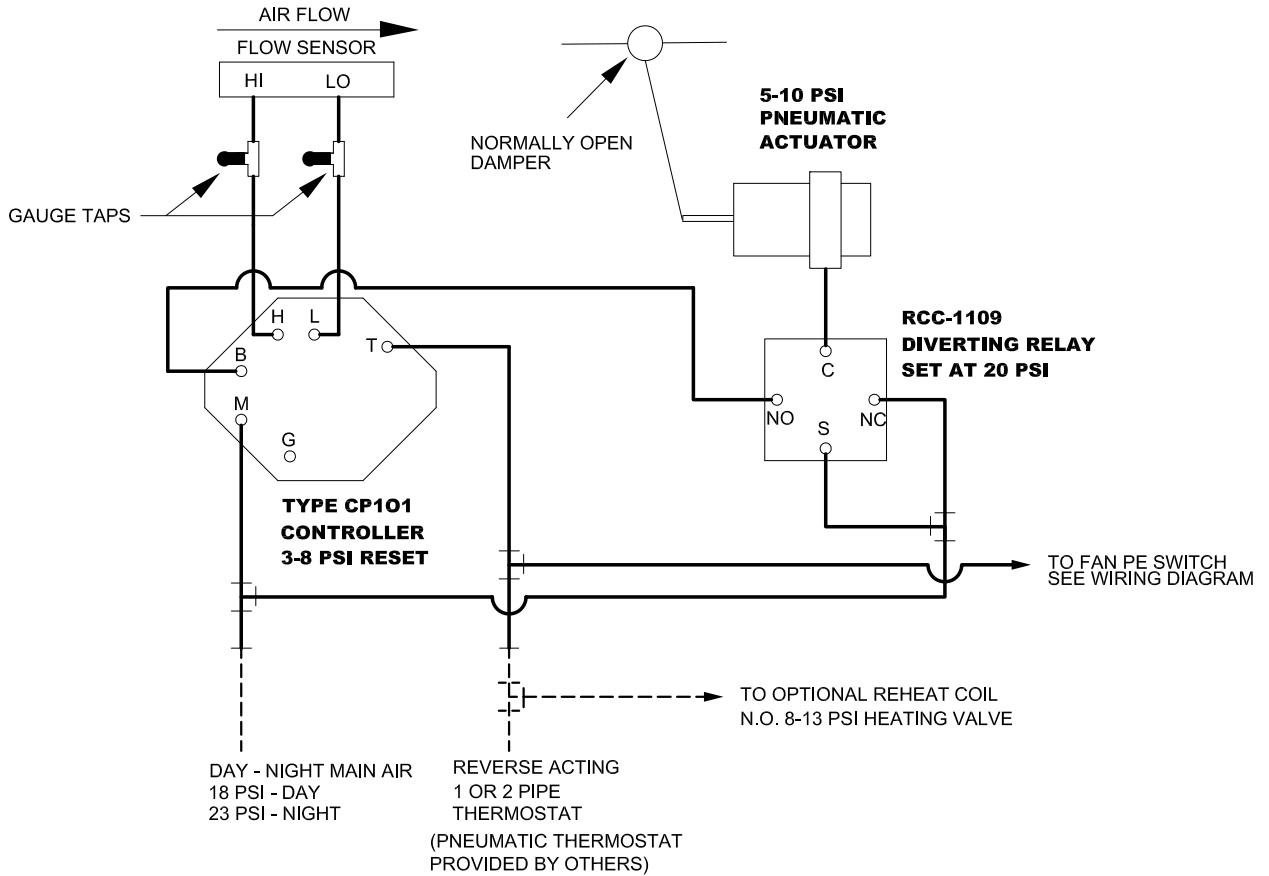


BTH/BL

231797

2011/11/07

FPV8 / FPVE8
 Kreuter CP-101
 Clg., Electric Reheat Coil
 Variable Vol., Intermittent Fan
 Pressure Independent
 R.A. T'Stat, N.C. Damper



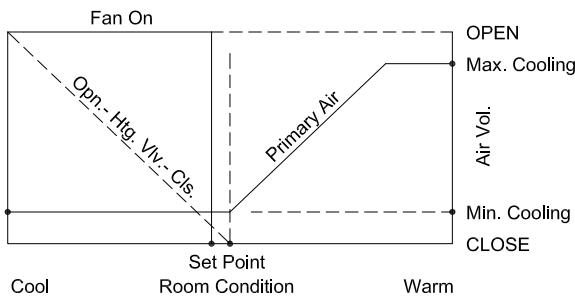
NOTES:

1. TOTAL AIR CONSUMPTION 0.017 SCFM.

LEGEND

- FACTORY PNEUMATIC TUBING
- - - - - FIELD PNEUMATIC TUBING

CONTROL GRAPH



Sequence of Operation -- Variable volume, intermittent fan, pressure independent, normally open, reverse acting cooling application with day-night fan control, and primary damper close-off at night. HW reheat coil is optional.

Day Operation: Occurs when the main air supply is at 18 psi or lower. An increase in space temperature decreases the thermostat output pressure. When the thermostat output decreases to 3 psi or less, the VAV box damper is maintained at the pre-selected maximum flow setting. A decrease in space temperature increases the thermostat output pressure. When the thermostat output increases to 8 psi, the VAV box damper is maintained at the pre-selected minimum flow setting. At thermostat output pressures above 8 psi, the minimum flow setting is maintained, and the thermostat will energize the unit fan to provide recirculated air to the space. The thermostat may also control an optional reheat coil. Airflow is held constant at any given thermostat output pressure between 3-8 psi regardless of changes in inlet duct static pressure.

Night Operation: Occurs when the main air supply is at 23 psi or higher. The VAV damper is held in the closed position. The thermostat will control the unit fan and optional reheat coil as described above to maintain the thermostat setting.

Normally Open Damper: On failure of the main air supply the damper will fail to the open position.

PROJECT:

ENGINEER:

CUSTOMER:

SUBMITTAL DATE:

SPEC. SYMBOL:

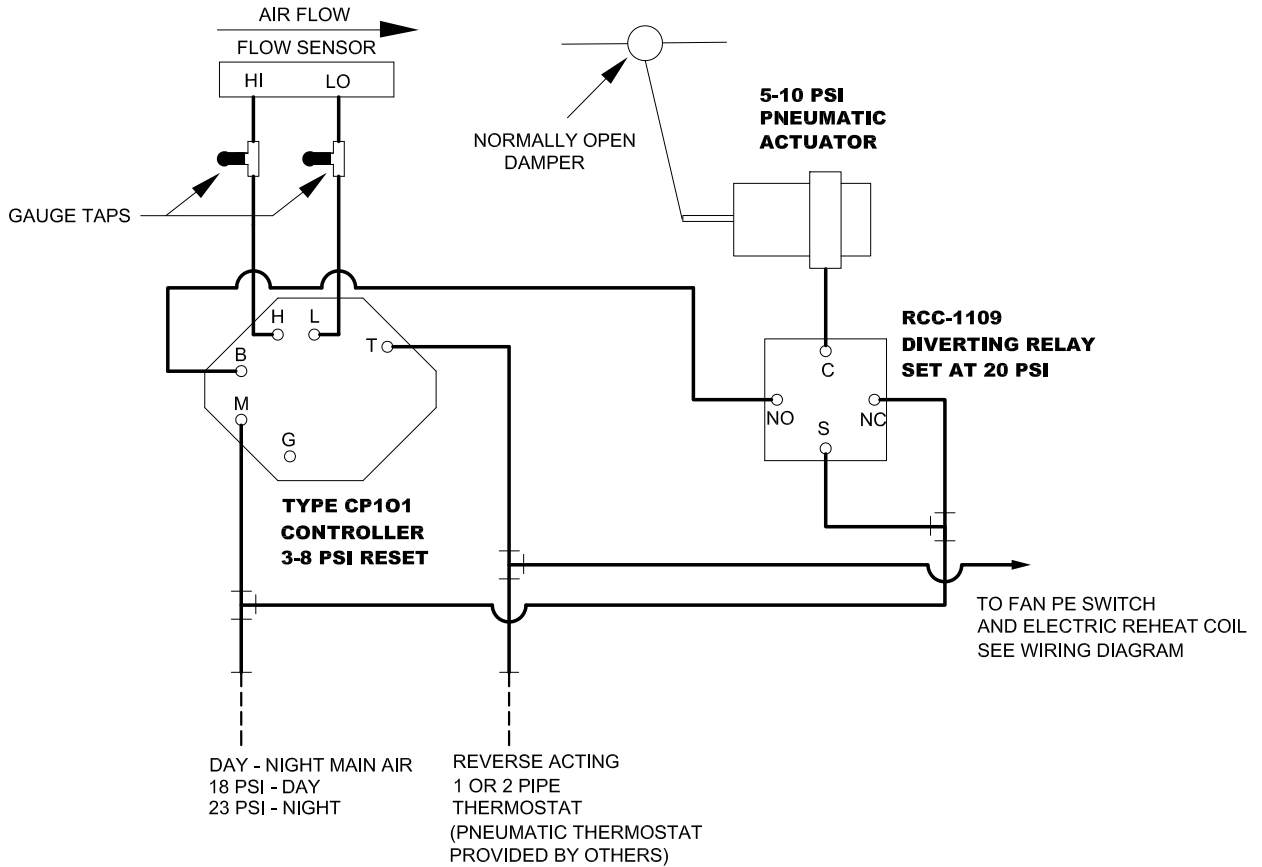


BTG/BC

231798

2011/11/07

FPV8 / FPVE8
Kreuter CP-101
Clg., HW Reheat Optional
Variable Vol., Day - Night Main
Pressure Independent
R.A. T'Stat, N.O. Damper



NOTES:

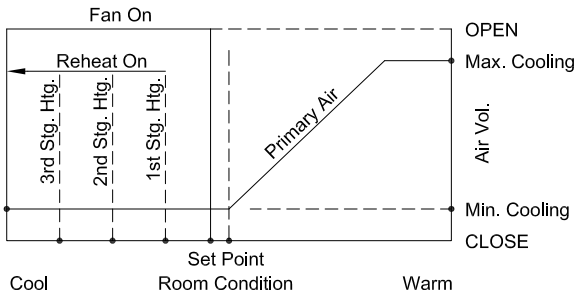
1. TOTAL AIR CONSUMPTION 0.017 SCFM.

LEGEND

————— FACTORY PNEUMATIC TUBING

- - - - - FIELD PNEUMATIC TUBING

CONTROL GRAPH



Sequence of Operation -- Variable volume, intermittent fan, pressure independent, normally open, reverse acting cooling application with electric reheat coil, day-night fan control, and primary damper close-off at night.

Day Operation: Occurs when the main air supply is at 18 psi or lower. An increase in space temperature decreases the thermostat output pressure. When the thermostat output decreases to 3 psi or less, the VAV box damper is maintained at the pre-selected maximum flow setting. A decrease in space temperature increases the thermostat output pressure. When the thermostat output increases to 8 psi, the VAV box damper is maintained at the pre-selected minimum flow setting. At thermostat output pressures above 8 psi, the minimum flow setting is maintained, and the thermostat will energize the unit fan to provide recirculated air to the space. The thermostat will also control an electric reheat coil. Airflow is held constant at any given thermostat output pressure regardless of changes in inlet duct static pressure.

Night Operation: Occurs when the main air supply is at 23 psi or higher. The VAV damper is held in the closed position. The thermostat will control the unit fan and optional reheat coil as described above to maintain the thermostat setting.

Normally Open Damper: On failure of the main air supply the damper will fail to the open position.

PROJECT:

ENGINEER:

CUSTOMER:

SUBMITTAL DATE:

SPEC. SYMBOL:

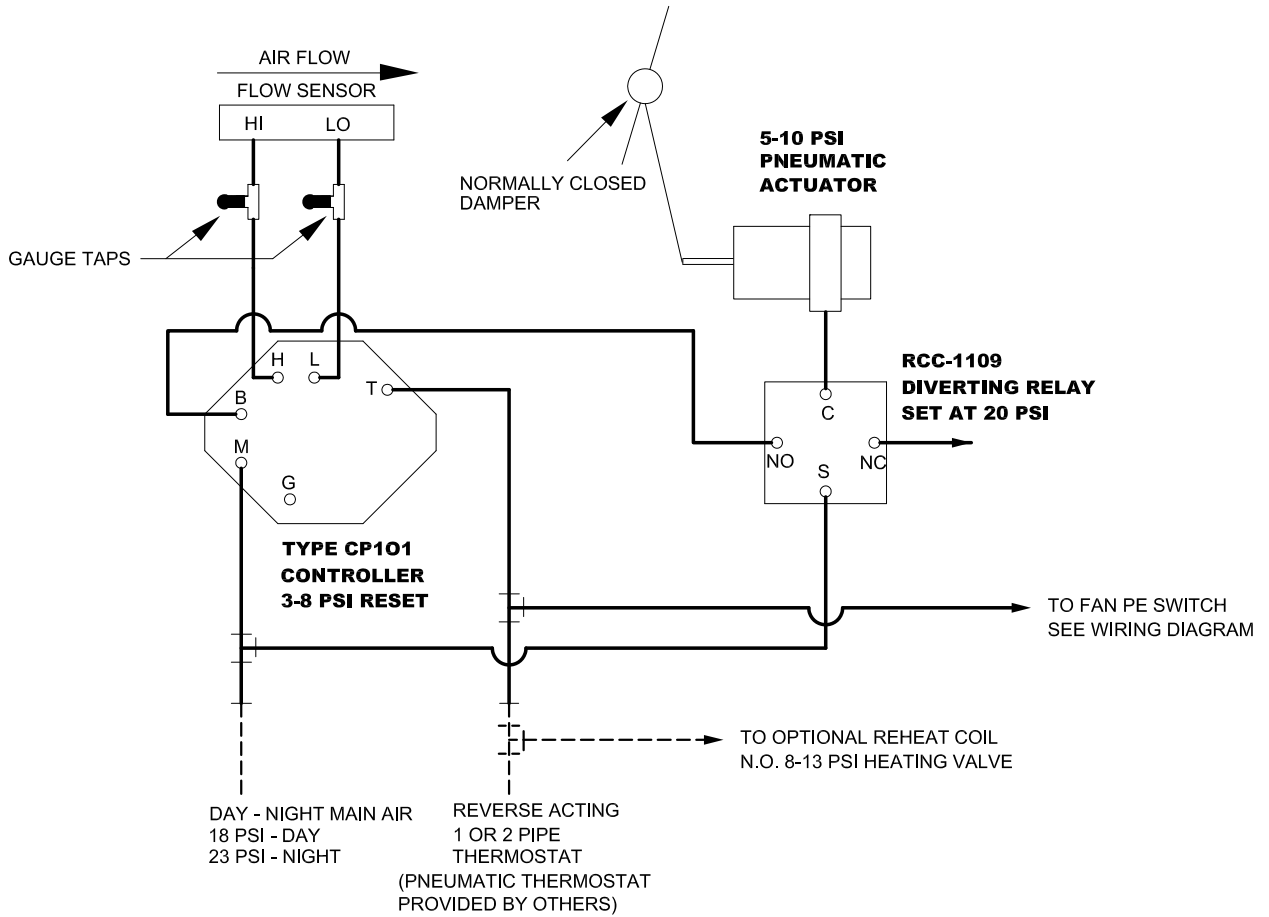


BTG/BC

231799

2011/11/07

FPV8 / FPVE8
Kreuter CP-101
Clg., Electric Reheat Coil
Variable Vol., Day - Night fan
Pressure Independent
R.A. T'Stat, N.O. Damper



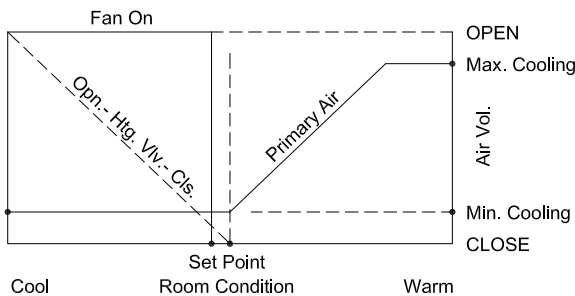
NOTES:

1. TOTAL AIR CONSUMPTION 0.017 SCFM.

LEGEND

- FACTORY PNEUMATIC TUBING
- - - - - FIELD PNEUMATIC TUBING

CONTROL GRAPH



Sequence of Operation -- Variable volume, intermittent fan, pressure independent, normally closed, reverse acting cooling application with day-night fan control, and primary damper close-off at night. HW reheat coil is optional.

Day Operation: Occurs when the main air supply is at 18 psi or lower. An increase in space temperature decreases the thermostat output pressure. When the thermostat output decreases to 3 psi or less, the VAV box damper is maintained at the pre-selected maximum flow setting. A decrease in space temperature increases the thermostat output pressure. When the thermostat output increases to 8 psi, the VAV box damper is maintained at the pre-selected minimum flow setting. At thermostat output pressures above 8 psi, the minimum flow setting is maintained, and the thermostat will energize the unit fan to provide recirculated air to the space. The thermostat may also control an optional reheat coil. Airflow is held constant at any given thermostat output pressure regardless of changes in inlet duct static pressure.

Night Operation: Occurs when the main air supply is at 23 psi or higher. The VAV damper is held in the closed position. The thermostat will control the unit fan and optional reheat coil as described above to maintain the thermostat setting.

Normally Closed Damper: On failure of the main air supply the damper will fail to the closed position.

PROJECT:

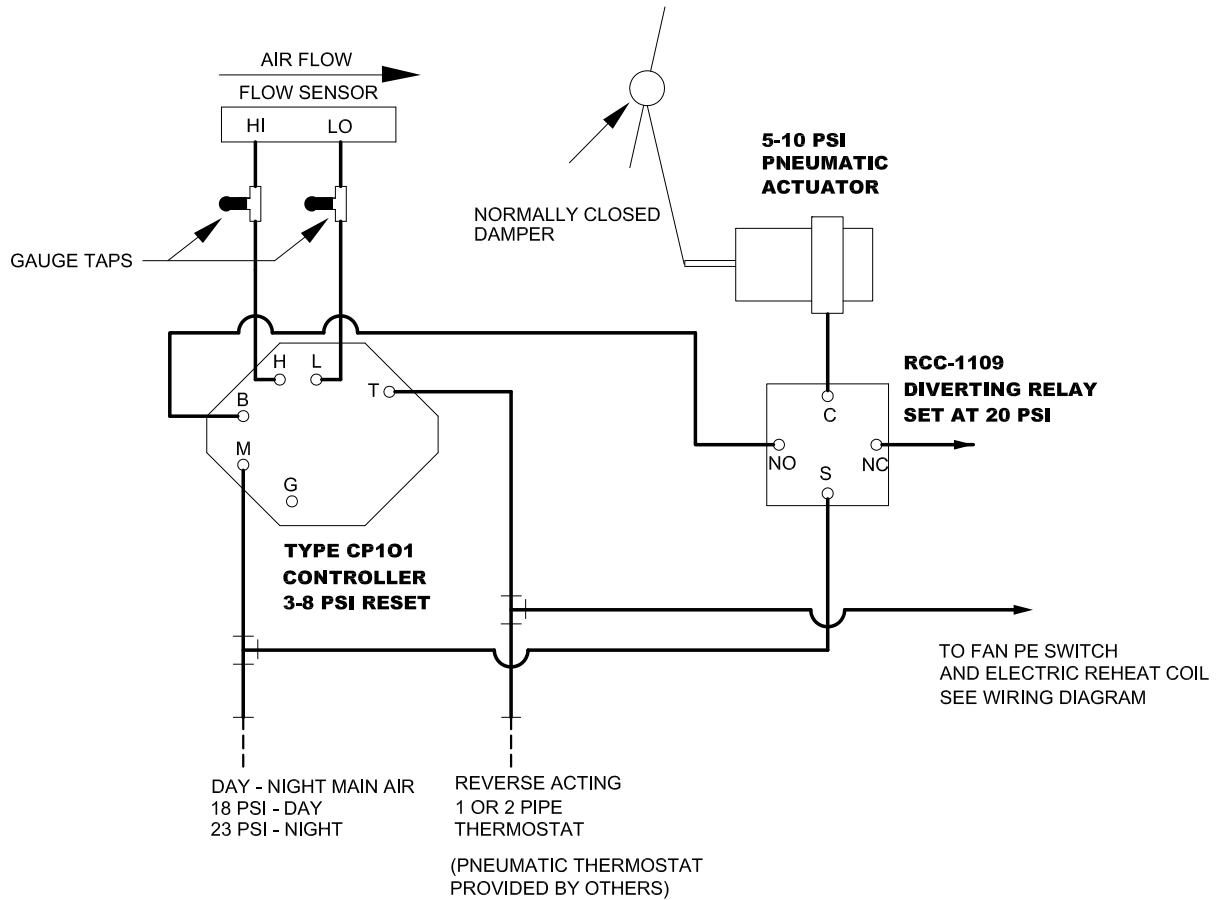
ENGINEER:

CUSTOMER:

SUBMITTAL DATE:

SPEC. SYMBOL:

PRICE [®]	
b7g/3c	FPV8 / FPVE8 Kreuter CP-101
231800	Clg., HW Reheat Optional Variable Vol., Day - Night fan Pressure Independent R.A. T'Stat, N.C. Damper
2011/11/07	



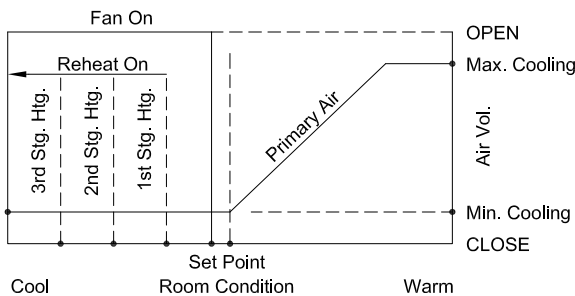
NOTES:

1. TOTAL AIR CONSUMPTION 0.017 SCFM.

LEGEND

- FACTORY PNEUMATIC TUBING
- - - - - FIELD PNEUMATIC TUBING

CONTROL GRAPH



Sequence of Operation -- Variable volume, intermittent fan, pressure independent, normally closed, reverse acting cooling application with electric reheat coil, day-night fan control, and primary damper close-off at night.

Day Operation: Occurs when the main air supply is at 18 psi or lower. An increase in space temperature decreases the thermostat output pressure. When the thermostat output decreases to 3 psi or less, the VAV box damper is maintained at the pre-selected maximum flow setting. A decrease in space temperature increases the thermostat output pressure. When the thermostat output increases to 8 psi, the VAV box damper is maintained at the pre-selected minimum flow setting. At thermostat output pressures above 8 psi, the minimum flow setting is maintained, and the thermostat will energize the unit fan to provide recirculated air to the space. The thermostat will also control an electric reheat coil. Airflow is held constant at any given thermostat output pressure regardless of changes in inlet duct static pressure.

Night Operation: Occurs when the main air supply is at 23 psi or higher. The VAV damper is held in the closed position. The thermostat will control the unit fan and optional reheat coil as described above to maintain the thermostat setting.

Normally Closed Damper: On failure of the main air supply the damper will fail to the closed position.

PROJECT:

ENGINEER:

CUSTOMER:

SUBMITTAL DATE:

SPEC. SYMBOL:



BTG/BC

231801

2011/11/07

FPV8 / FPVE8
Kreuter CP-101
Clg., Electric Reheat Coil
Variable Vol., Day - Night fan
Pressure Independent
R.A. T'Stat, N.C. Damper