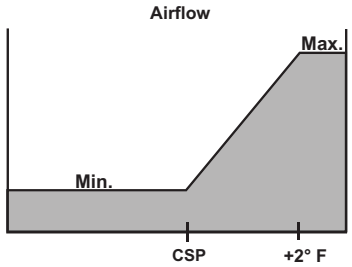
SINGLE DUCT

Controller Type: AT31

Cooling Only

With room temperature at setpoint, unit delivers minimum cfm. An increase in room temperature causes airflow to increase, reaching maximum cfm 2°F above setpoint.

Models: AESV, AECV, AQCV



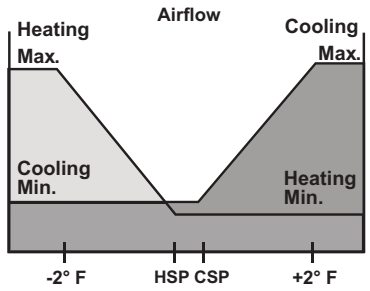
Controller Type: AT34

Heating/Cooling Autochangeover

With supply temperature below 70°F, unit operates in cooling mode. An increase in room temperature causes airflow to increase, reaching maximum cfm 2°F above setpoint.

If supply temperature increases above 80°F, unit changes to heating mode. With supply temperature above 80°F, unit operates in heating mode. A decrease in room temperature causes airflow to increase, reaching maximum cfm 2°F below setpoint. If supply temperature decreases below 70°F, unit changes to cooling mode.

Models: AESV, AECV, AQCV



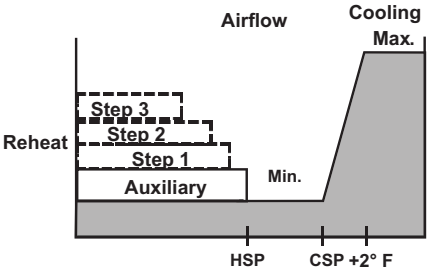
Controller Type: AT33

Cooling with Electric Reheat

An increase in room temperature causes airflow to increase, reaching maximum cfm 2°F above cooling setpoint. On a decrease in room temperature, minimum airflow is maintained until 0.2°F below heating setpoint, when airflow increases to auxiliary cfm.

At 0.4°F below heating setpoint, the first reheat stage is energized. The optional second and third stages are energized at 1.1° and 1.7°F below heating setpoint, respectively. An increase in room temperature de-energizes the heat stages at 1.5°, 0.9°, and 0.2°F below heating setpoint.

Model: AESV



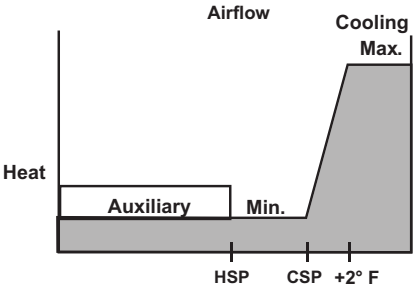
Controller Type: AT33

Cooling with Auxiliary Heat

An increase in room temperature causes airflow to increase, reaching maximum cfm 2°F above cooling setpoint. On a decrease in room temperature, minimum airflow is maintained until 0.2°F below heating setpoint.

Airflow increases to auxiliary cfm. At 0.4°F below heating setpoint, a stage of on/off auxiliary heat (water coil, radiant panel, radiator, etc.) is activated. An increase in room temperature deactivates the auxiliary heat at 0.2°F below heating setpoint.

Model: AESV



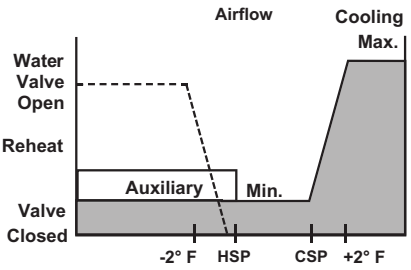
Controller Type: AT35

Cooling with Proportional Hot Water Reheat

An increase in room temperature causes airflow to increase, reaching maximum cfm 2°F above cooling setpoint.

On a decrease in room temperature below heating setpoint, a proportional valve begins to open. The water valve is fully opened 2°F below heating setpoint. At 0.2°F below heating setpoint, airflow increases to auxiliary cfm if desired.

Model: AESV



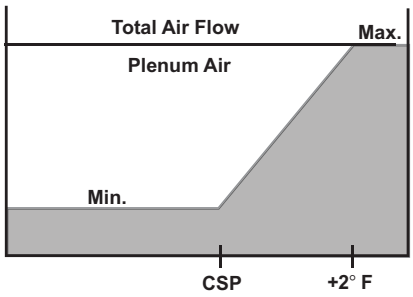
Note: The cooling and heating setpoints can be adjusted to be within 1°F from each other

FAN POWERED

Controller Type: AT31

Constant Fan VAV Terminal, Cooling Only

Fan operates continuously, providing constant volume to the space. With room temperature at setpoint, unit delivers minimum cooling cfm. An increase in room temperature causes airflow to increase, reaching maximum cooling cfm 2°F above setpoint.



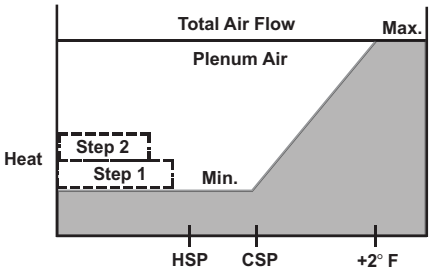
Models: ATFS, ATQS, AFLS

Controller Type: AT33

Constant Fan VAV Terminal with Electric Heat

Fan runs continuously, providing constant volume to the space. With room temperature at setpoint, unit delivers minimum cooling cfm. An increase in room temperature causes airflow to increase, reaching maximum cooling cfm 2°F above cooling setpoint.

On a decrease in room temperature, minimum cooling airflow is maintained. At 1.1°F below heating setpoint, the first heat stage is energized. The optional second heat stage is energized at 1.7°F below heating setpoint. An increase in room temperature de-energizes the heat stages at 1.5° and 0.9°F below heating setpoint.



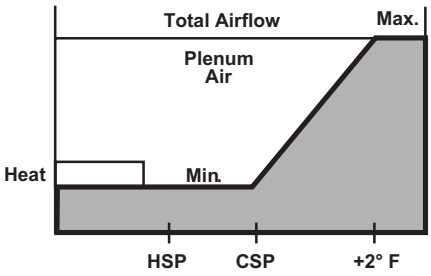
Models: ATFS, ATQS, AFLS

Controller Type: AT33

Constant Fan VAV Terminal with Auxiliary Heat

Fan runs continuously, providing constant volume to the space. With room temperature at setpoint, unit delivers minimum cooling cfm. An increase in room temperature causes airflow to increase, reaching maximum cooling cfm 2°F above cooling setpoint.

On a decrease in room temperature, minimum cooling airflow is maintained. At 1.1°F below heating setpoint, a stage of on/off auxiliary heat (water coil, radiant panel, radiator, etc.) is activated. An increase in room temperature de-activates the auxiliary heat at 0.9°F below heating setpoint.



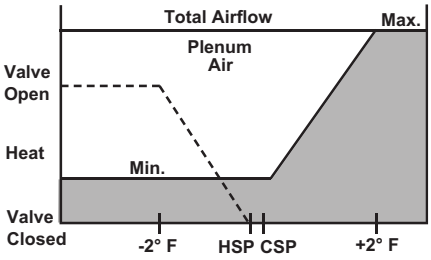
Models: ATFS, ATQS, AFLS

Controller Type: AT35

Constant Fan VAV Terminal with Proportional Hot Water Heat

Fan operates continuously, providing constant volume to the space. With room temperature at cooling setpoint, unit delivers minimum cooling cfm. An increase in room temperature causes airflow to increase, reaching maximum cooling cfm 2°F above cooling setpoint.

On a decrease in room temperature, minimum cooling airflow is maintained. When room temperature falls below heating setpoint, a proportional water valve begins to open. The water valve is fully opened 2°F below heating setpoint.



Models: ATFS, ATQS, AFLS

Note: The cooling and heating setpoints can be adjusted to be within 1°F from each other

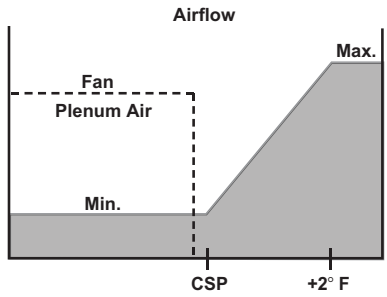
FAN POWERED

Controller Type: AT31

Variable Volume Fan VAV Terminal, Cooling Only

With room temperature at setpoint, unit delivers minimum cooling cfm. An increase in room temperature causes airflow to increase, reaching maximum cooling cfm 2°F above setpoint.

On a decrease in room temperature, minimum cooling airflow is maintained. When room temperature is 0.4°F below setpoint, the unit fan is energized to deliver return air to the space. The unit fan is de-energized when room temperature is 0.2°F below setpoint.



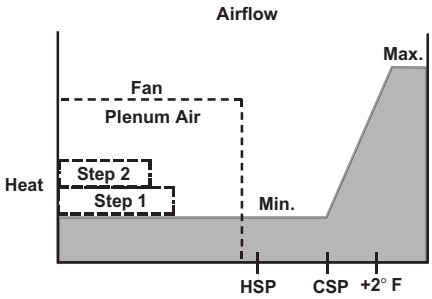
Models: ATQP, AFLP

Controller Type: AT33

Variable Volume Fan VAV Terminal with Electric Heat

With room temperature at cooling setpoint, unit delivers minimum cooling cfm. An increase in room temperature causes airflow to increase, reaching maximum cooling cfm 2°F above cooling setpoint.

On a decrease in room temperature, minimum cooling airflow is maintained. When room temperature is 0.4°F below heating setpoint, unit fan is energized to deliver return air to the space. At 1.1°F below heating setpoint, the first heat stage is energized. The optional second heat stage is energized at 1.7°F below heating setpoint. An increase in room temperature de-energizes the heat stages and unit fan at 1.5°, 0.9°, and 0.2°F below heating setpoint, respectively.



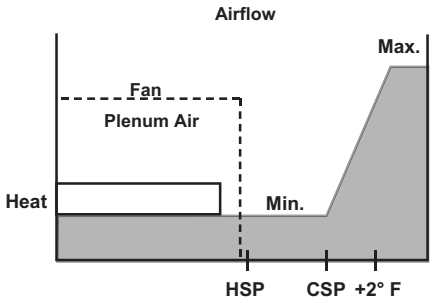
Models: ATQP, AFLP

Controller Type: AT33

Variable Volume Fan VAV Terminal with Auxiliary Heat

With room temperature at cooling setpoint, unit delivers minimum cooling cfm. An increase in room temperature causes airflow to increase, reaching maximum cooling cfm 2°F above cooling setpoint.

On a decrease in room temperature, minimum cooling airflow is maintained. When room temperature is 0.4°F below heating setpoint, unit fan is energized to deliver return air to the space. At 1.1°F below heating setpoint, a stage of on/off auxiliary heat (water coil, radiant panel, radiator, etc.) is activated. An increase in room temperature de-activates the auxiliary heat and unit fan at 0.9° and 0.2°F below heating setpoint, respectively.



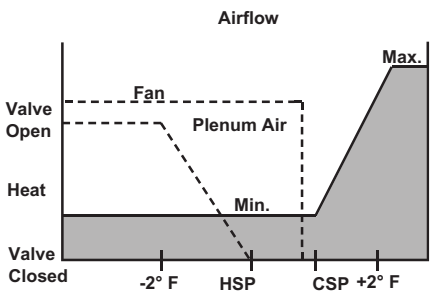
Models: ATQP, AFLP

Controller Type: AT35

Variable Volume Fan VAV Terminal Cooling with Proportional Hot Water Reheat

With room temperature at cooling setpoint, unit delivers minimum cooling cfm. An increase in room temperature causes airflow to increase, reaching maximum cooling cfm 2°F above cooling setpoint.

On a decrease in room temperature, minimum cooling airflow is maintained. When room temperature is 0.4°F below setpoint, unit fan is energized to deliver return air to the space. If room temperature falls below heating setpoint, a proportional water valve begins to open. The water valve is fully opened 2°F below heating setpoint.



Models: ATQP, AFLP

Note: The cooling and heating setpoints can be adjusted to be within 1°F from each other

NOTES:

- AUXILIARY HEAT
  Controls provide a 24 VAC output signal for operation of devices requiring up to 10 VA

- PROPORTIONAL HOT WATER REHEAT
  Controls are compatible with any 0 to 10 VDC nominal valve, configured such that 0 and 10 VDC correspond to fully closed and fully open, respectively. Valve control signal requirements up to 10 mA are acceptable.

- MORNING WARM-UP (TERMINALS WITHOUT REHEAT/AUXILIARY HEAT ONLY)
  When supply air temperature exceeds 80°F, damper drives to a fully open position

- NIGHT SHUTDOWN (FAN POWERED TERMINALS ONLY)
  A pressure switch turns fan off when main fan system is off. Night shutdown automatically locks out optional electric heat.

- NIGHT SETBACK (FAN POWERED TERMINALS ONLY)
  A pressure switch detects main fan system shutdown. Unit fan and heat/auxiliary heat operate to maintain setback temperature. Constant volume fans operate intermittently in night setback.

- OPTIONAL STRATEGIES
  Night setback, night shutdown, and primary damper overrides may be initiated by external 24 VAC inputs and/or contact closures. Consult your Titus representative for details concerning special control sequences.