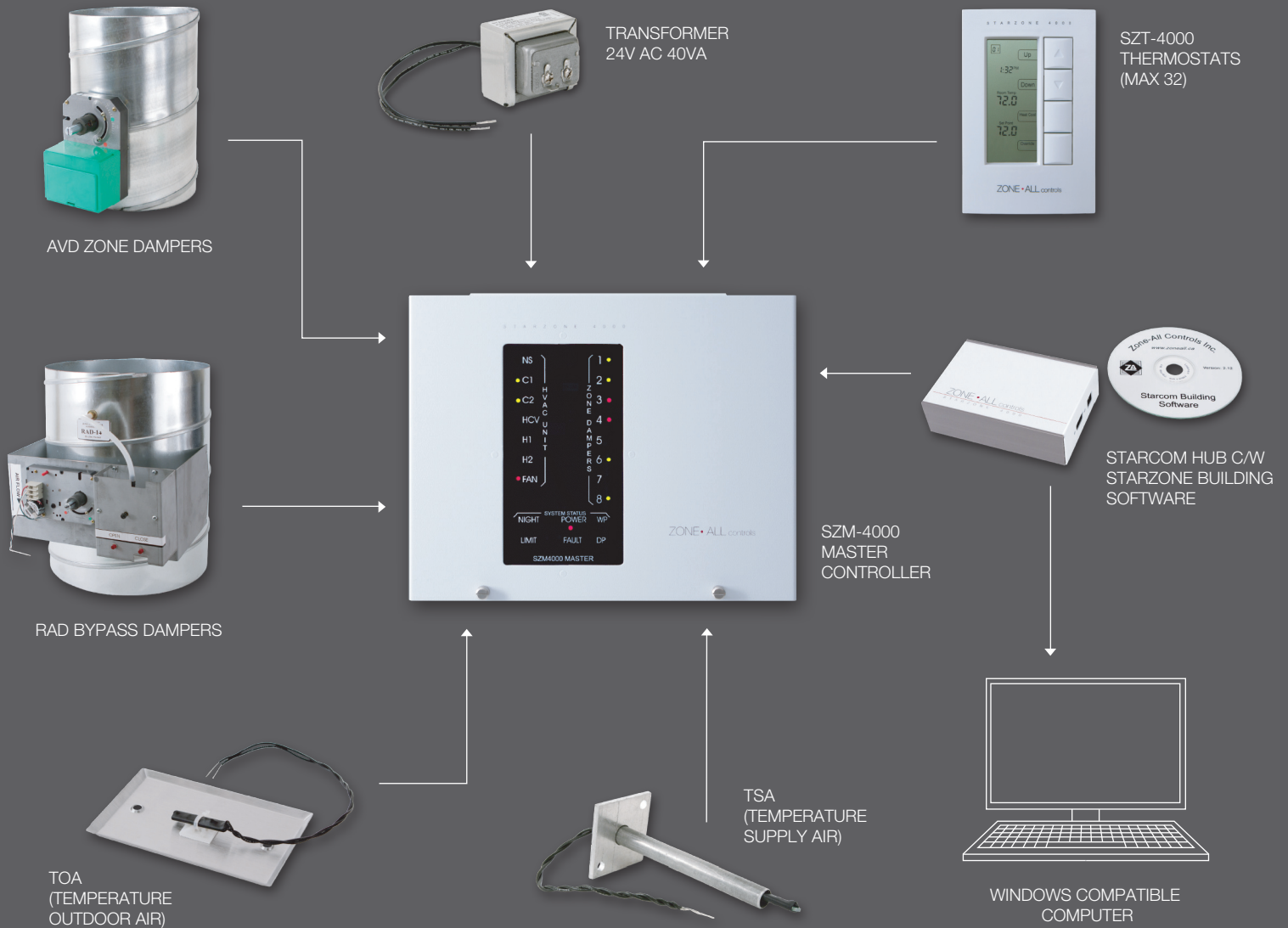




STARZONE™ 4000
Integrated HVAC Zone Control

The Full Feature HVAC Comfort Control System



Effective, efficient comfort control tailored to specific installation needs.

Imagine a simple rooftop HVAC unit with a single control system that is providing heating and cooling comfort to the various zones of a small commercial area.

Next, expand your vision and picture this same system as it multiplies its effectiveness, providing this fully regulated and efficient comfort control throughout hundreds of individual zones contained in an office building, an industrial plant, or a retail complex.

Now you've grasped the true beauty and flexibility of the Starzone 4000 system. Accurately controlled comfort from small to large installations made effectively manageable and efficient across the complete spectrum of uses.

SZM-4000 Master Controller

The heart of the Starzone 4000 system is the SZM-4000 Master controller. Each HVAC unit that is to be zoned will have its own SZM-4000 Master controller and each panel can operate independently or be networked together.

- Controls the temperature for up to 32 zones.
- Modulates up to 32 variable air volume dampers (AVDs).
- Controls heating/cooling/fan modes for any HVAC unit.
- Communicates all data to and from a central PC computer.
- 24 hour trend logging of all thermostat temperatures, HVAC unit operation, supply and outdoor air temperature.

SZT-4000 Thermostat

The SZT-4000 thermostat communicates with the SZM-4000 Master control panel through the associated zone damper's Motor Controller Board.

- Each thermostat provides local 24 hour trend log.
- Damper test mode allows user to locally test operation of zone damper and auxiliary heat relay.
- Adjustable set point range.
- LCD display shows time, set point, room temperature and zone number.
- Two hour night set back override.

AVD Zone Damper

The AVD zone damper is a fully modulating single duct pressure dependant control. During times of no heating or cooling demands, the damper returns to its fully open position ensuring superior ventilation.

- An indicator on the end of the damper shaft shows the damper's current position.
- Closed position can be field adjusted to set a minimum position.
- Elliptical blades for linear operation c/w neoprene gasket to eliminate air noise.

RAD Bypass Damper

The bypass or return air damper (RAD) bypasses excess air from the supply main to the return of the HVAC unit. As zone dampers modulate to partially open positions, the air system's pressure increases, resulting in increased outlet velocities. The RAD automatically modulates to maintain a constant supply static pressure.

Starcom® Hub (PC/Remote Interface)

The Starcom Hub and software allows building owners to monitor and control their heating and cooling system locally or remotely over the internet.

- Observe individual zone temperatures, damper positions, and individual zone heating and cooling demands.
- Individually set the demand capability for each thermostat.
- Remotely lock out thermostat's set point.
- Set damper maximum and minimum positions for ventilation, heat, or cooling.
- Download and display trend log data.

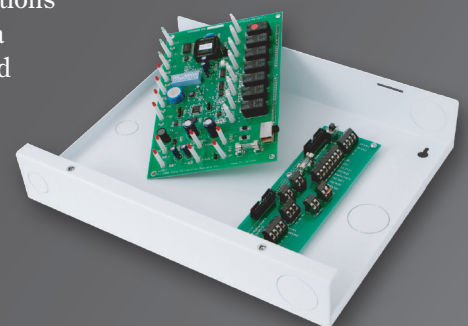
Accessories

The TSA (Supply Air Sensor) measures the supply air temperature and is used to maintain and control the discharge air temperature during heating and cooling operations. The supply air sensor is also used to ensure that the hot or cold air is purged from the duct before pre-positioning zone dampers during changing demands.

The TOA (Outside Air Sensor) measures the outdoor air temperature and is used to disable both HVAC heat and auxiliary heat as well as adjust damper maximum positions for cooling.

Refined and tested over time for affordable, quality performance.

The Starzone 4000 system is the result of two decades of dedicated research and development by Zone All design engineers and technicians. The advantage that the Starzone 4000 system delivers is operational simplicity combined with a vastly expanded performance capability. Now, with precision comfort zone control and HVAC efficiency, the demands of large-scale and complex installations are available in a cost-effective and innovative configuration.



Assessing your needs is as simple as 1-2-3

1 How many SZM-4000 Master panels and transformers do I need?

One Master control panel is required for each Air Handling Unit (AHU) you wish to control. You will also require 1 transformer for every 8 zones.

2 How do I select the AVD supply air dampers?

Take the known CFM for each zone, and then go to Table 1 and select the corresponding size. Dampers are normally selected for less than 0.12" wg. Should lower velocities be preferred, the damper size can be selected from the corresponding velocity column. Under no circumstances should dampers be selected resulting in a pressure drop greater than 0.12" wg.

3 How big should I make the RAD bypass damper?

For most systems (greater than 6 zones) the total CFM capacity of the AHU multiplied by 0.75 represents the total capacity of the bypass damper. In smaller systems (6 zones or less), removing the smallest zone provides a 'worst case' scenario resulting in a total bypass capacity of the total AHU CFM - the smallest zone CFM. Consult Table 2 to select a bypass damper at the 0.35" wg. line. In cases where the total capacity exceeds 3500 CFM, more than one bypass damper can be paralleled or we can supply custom rectangular bypass dampers to suit your needs.

Table 1

AVD Capacities	AVD SELECTION			
	800	1100	1500	2000
VELOCITY fpm (feet per minute)				
MODEL & SIZE (inches)	CFM (cubic feet per minute)			
AVD-6	(.04 pd)- 157	216	287	
AVD-8	(.03 pd)- 280	385	525	
AVD-10	(.02 pd)- 435	600	817	1090
AVD-12	(.015 pd)- 628	865	1180	1572
AVD-14	(.01 pd)- 854	1177	1604	2139
AVD-16	(.01 pd)- 1135	1537	2095	2790

pd: Pressure drop in inches of water gauge is shown for 800 fpm.

Table 2

RAD Capacities	RAD SELECTION			
	1500	2000	2500	3000
VELOCITY fpm (feet per minute)				
MODEL & SIZE (inches)	CFM (cubic feet per minute)			
RAD-6	285			
RAD-8	525			
RAD-10	817	1090		
RAD-12	1180	1572	2670	
RAD-16	2095	2790	3490	4180

Note: MAXIMUM recommended velocity is 3000 fpm.

pd: Pressure drop in inches of water gauge.

Starcom® Hub and Software

Provides the interface between the Starzone 4000 system and computer. The following are only a few of the many features available with the Starcom software.

- Observation of individual zone temperatures, damper positions, and zone heating or cooling demands.
- Setting of demand capability for each individual thermostat.
- Varying the number of demanding zones before heating or cooling is turned on.
- Fixing the set point temperature on any individual thermostat.
- Monitoring the HVAC unit for alarm conditions and discharge air temperature.
- Programming night set back and day start times, as well as up to one year of holiday scheduling.
- Trend logging for individual zones, or groups of zones.
- Communicate from off-site computer by internet direct to on-site system.



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