



ZONEFIRST®

Controlling Temperature Room to Room

GREEN COMFORT
SUSTAINABLE SAVINGSSM



WHO IS ZONEFIRST?

ZONEFIRST is the first company that successfully developed and marketed HVAC Zoning Systems back in the 1950's and is today a leading manufacturer of HVAC zone dampers and zoning systems. Several other major zoning companies are in business due to ZONEFIRST.

It was in the mid to late 1950's when Richard Foster developed the first automatic motorized dampers, registers and diffusers that were thermostatically controlled. He marketed these products under the trade name Zone-A-Trol with another company when in 1964 he founded Trolex Corporation and the start of the well known trade name Trol-A-Temp. In 1999 the Trol-A-Temp brand was acquired by Honeywell.

Since that time, Trolex has continued to manufacture dampers for a number of OEM's. In 2004 Trolex re-entered the HVAC market as ZONE-A-TROL and later the ZONEFIRST trade name. This new name signifies the many firsts the company has developed in the HVAC industry. We were the first company to develop automatic dampers, registers, and diffusers for zoning, centralized zone controllers, the first zoning system to feature normally open dampers and the first to zone heat pumps in the early 1970s.

BEING FIRST IS OUR TRADITION.

ZONEFIRST is now the first company to offer the new EZ-Wire controls and dampers. These New Color-Coded Push-In wiring terminals make wiring the thermostats, transformer, sensors and HVAC equipment fast and easy. The New Plug-In Dampers simplify damper wiring and make connecting multiple dampers literally a snap. These new DC motors consume 80% less energy than 24 volt motors and the wire is included with each damper. ZONEFIRST is also promoting the concept of designing a HVAC Zoning System first, and incorporating that design into every new HVAC System. When you think about hydronic and radiant heating, zoning is always included. Even today's cars include dual zone climate control. Imagine that. People are buying zone control in a space smaller than the smallest room in their home. It's because Zoning makes sense!

Zoning improves comfort and saves energy by not heating or cooling unused rooms or room that are already comfortable.

There is only one way to provide comfort throughout the home and office and that is with ZONEFIRST Zone Control.

TABLE OF CONTENTS

Who is ZONEFIRST	2
What is Zoning?	3
Why Zoning ?.....	3
How does Zoning work?.....	3
Why Should I Sell Zoning?	4
Zoning System Design	4
Designing the Duct System.....	5
Variable Speed HVAC	5
Where to Start Your Zoning Design	6
Putting a System Together	7
Spring Return Damper System.....	8
Plug 'n Play Zone Damper System.....	10
By-Pass and Modulating Dampers	12
Thermostats and Damper Motors.....	13
Accessories.....	14
Freshex.....	15
Selection Guide	16



WHAT IS ZONING AND ZONE CONTROL?

Zoning allows you to precisely control the temperature in distinct areas of your home by placing a thermostat in each room (or zone). A Zoning System uses automatic dampers that open and close to control the flow of air into those zones and those dampers are conveniently controlled by their own thermostat. A central control panel is also used to sequence the zone thermostat calls, zone dampers and HVAC Equipment.

WHY ZONING?

When people ask about why should they pay extra for zoning, the question should be, "Why aren't you buying Zoning? Think about this, you have a light switch for every room? Wouldn't it be easier and less expensive to have just one light switch for the whole house? Of course it would but we don't. However with HVAC there is only one switch, a thermostat centrally located that controls the whole house.

One thermostat cannot properly control the temperature in different levels or opposite ends of the house. Plus why heat or cool rooms that may already be comfortable. Zoning solves this, automatically.

What costs more? Electricity for lighting or the energy for HVAC? On average HVAC is 40% to 50% of most utility bills. Why waste heating and cooling on rooms that are unoccupied or already comfortable?

Without zoning you are paying more for heating and cooling than you need to be. Often homes with one central thermostat will have temperature differences between the various rooms in the house. Having only one thermostat in the home or office does not allow for convenience or flexibility. For example, the baby's room cannot be warmer for sleeping while the parent's room is nice and cool. A home without zoning does not allow for more cooling needed in the kitchen and family room on a hot summer day when no one is in the upstairs bedrooms.

There are numerous factors that affect the temperature in your home or office. Some examples include solar gain, appliances, lighting, fireplaces, exposures, building design, etc. Again, having one thermostat cannot properly compensate for all of these varying factors.

Balancing airflow with manual dampers and duct sizing does not compensate for changing occupancies and temperature loads. The only true way to do this is with Zoning.

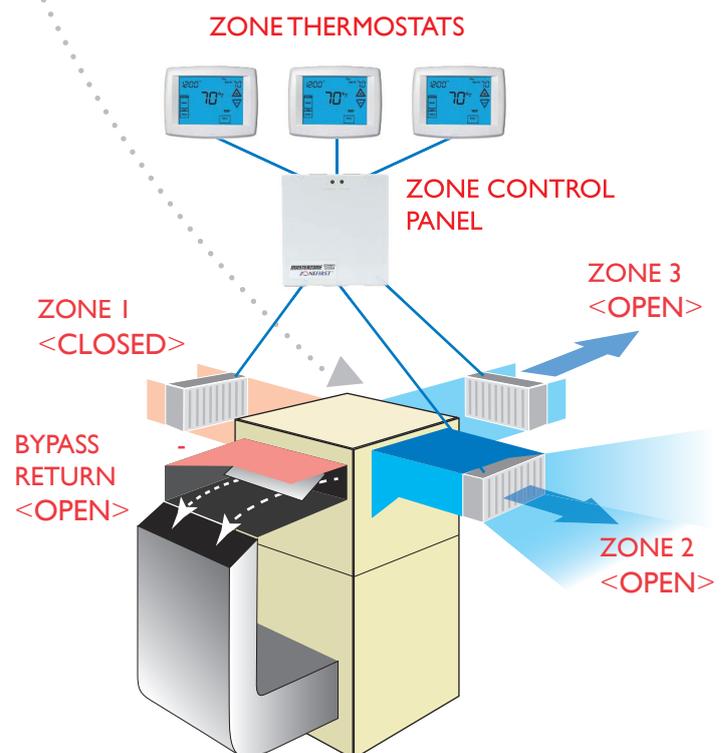
HOW DOES ZONING WORK?

Zoning works simply by using multiple thermostats located in the various rooms or zones of the home or office to control motorized dampers and the HVAC equipment to maintain a desired comfort level in each zone.

When a zone thermostat calls, either for heating or cooling, the damper to the calling zone remains open and the dampers to the zones not calling close. The heating and cooling then is brought on and is delivered through the zone damper. Once the zone thermostat is satisfied (reaches its temperature set point), the HVAC unit is shut off and the calling zone(s) remains open for a two minute purge. This purge cycle allows the excess heated or cooled air to be directed into only the last zone(s) calling for it. Once this time elapses all dampers will return open and will await the next call.

Some systems may require a by-pass duct from the supply air to the return in order to by-pass excess air. This happens when a small number of zones are calling and the total capacity of the HVAC unit cannot be directed into the calling zone(s). The by-pass damper can be barometric or motorized.

The barometric SPRD (Static Pressure Regulating Damper) model operates on the air pressure in the duct and the motorized modulating damper (RDM/ZDSM/ZDBM) requires the use of a static pressure switch (SPS) or static pressure control (SPC) to more accurately sense the duct pressure and modulate the by-pass damper.



WHY SHOULD I SELL ZONING?

Your customers want it! Consumer surveys show that when told about zoning and the benefits, over 62% would buy a zoning system. The problem is most homeowners do not know about zoning or the benefits. This is where zoning can help contractors and builders educate the consumer on how to increase your comfort and convenience throughout the home and provide substantial energy savings up to 30% without adding multiple units. Again, you have a light switch in every room of your home, why not have a thermostat? IT MAKES SENSE!

Zoning provides HVAC Contractors, Installers and Home Builders the ability to differentiate themselves from the competition who often do not offer zoning. Zoning also gives you a great opportunity to make more money on every job. Consumers and home buyers not knowing the tremendous savings zoning can offer, will most commonly just add multiple units to help the situation. However, multiple units costs thousands more than a single unit with zoning.

ZONING SYSTEM DESIGN

Designing a system with zoning is easier than many think. Implementing zoning into new construction is easy as the duct system can be laid out specifically for zoning and wires can be run for thermostats.

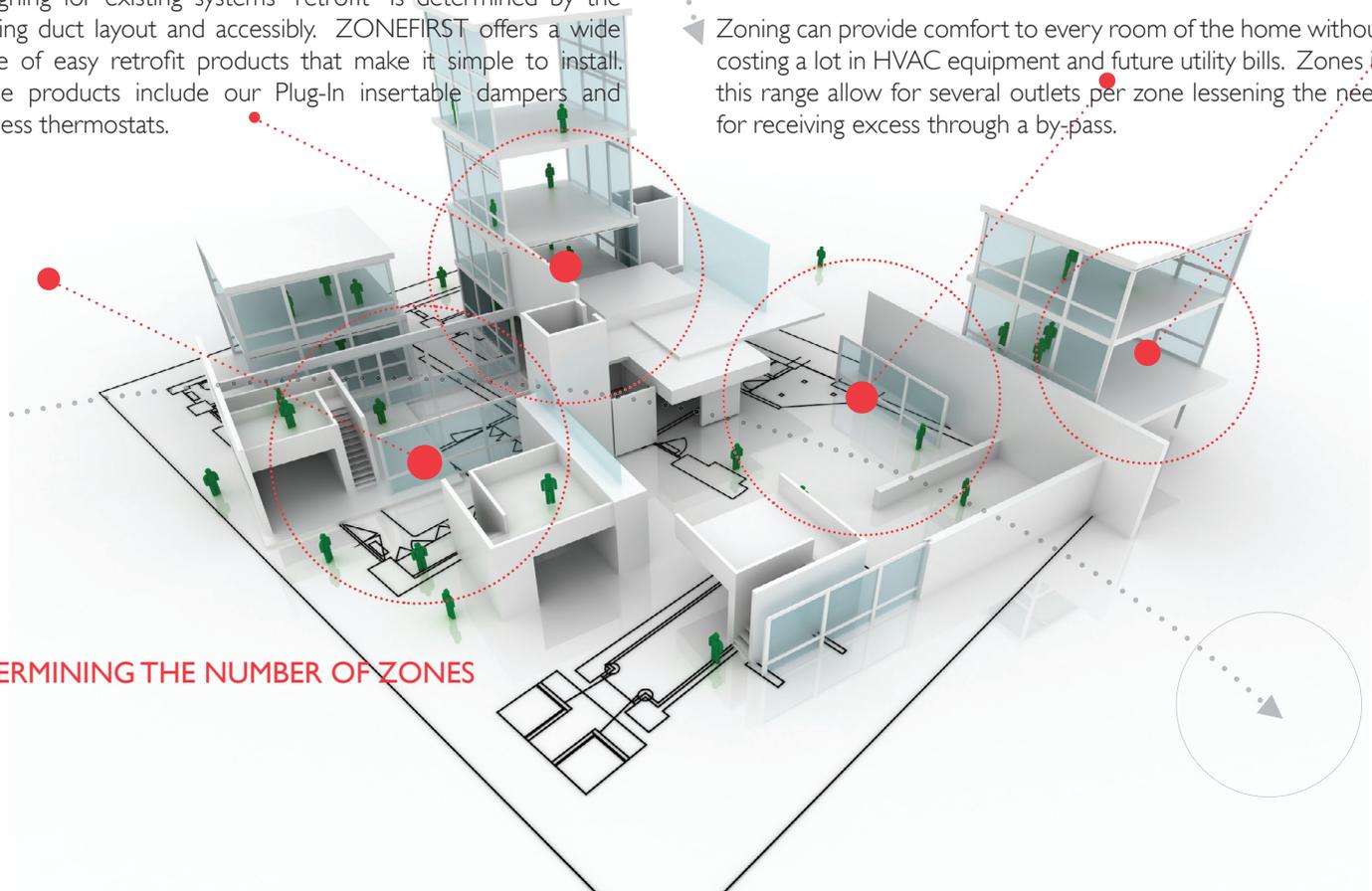
Designing for existing systems "retrofit" is determined by the existing duct layout and accessibility. ZONEFIRST offers a wide range of easy retrofit products that make it simple to install. These products include our Plug-In insertable dampers and wireless thermostats.

A home or building can have almost as many zones as one wants to pay for. The determining factor is the cost per zone. Room by Room Zoning can be a great idea however the cost may not always be practical. Also, the greater number of zones the more thought must be put into the system design, controls and installation. Typically most homes are zoned on the basis of occupancy, levels, use or exposure. A typical size of a zone would be between 400 to 800 sf allowing several outlets grouped into one zone. However, there are applications, especially in commercial where each outlet/office may be zoned as well.

The biggest factor in determining the number of zones depends on the size of the home and the homeowners budget. The larger the home the more zones. As homes have grown in size, often just the master bedroom can be its own zone. As newer homes get more feature oriented with media rooms, exercise rooms, bonus rooms, home offices, etc. the need for zoning is higher in demand and crucial when it comes to comfort, convenience, and energy savings. The addition of such rooms requires zoning however the amount of time and the need to condition these rooms 24/7 is far less. The need to zone is crucial and can save a homeowner thousands in upfront costs by eliminating the need for separate HVAC units. Zoning can also allow existing units supplying other areas of the home to divert air to these zones when needed and still provided comfort for the more often occupied zones.

Zoning can provide comfort to every room of the home without costing a lot in HVAC equipment and future utility bills. Zones in this range allow for several outlets per zone lessening the need for receiving excess through a by-pass.

DETERMINING THE NUMBER OF ZONES



DESIGNING THE DUCT SYSTEM

Most commonly homes are split into at least two zones: bedrooms and living areas, or upstairs and downstairs. In these instances the design would typically be a damper and thermostat for each zone with a central zoning panel. In most cases where the zones are approximately equal in size, each zone duct can be sized to handle about 2/3 of the total air flow with an adequate number of takeoffs, typically 5-6 per zone. This type of design would disperse the air nicely when both zones are open, as well as when only one zone is open. This is applicable for small – two and three zone systems using a constant volume fan.

Ideally a trunk duct is run for each zone and the outlets for the same zone come off the zone trunk. This minimizes the need for additional dampers for each outlet. However, in many retrofit homes where there is only one trunk duct serving all zones and outlets are scattered, a damper can be installed for each outlet as well.

When designing the system it is important to look at each zone and the number of outlets for each zone. Consider at any time only one zone may open and look at the smallest zone being the only one open. Determine how much air can go into that zone. Subtract that from the total CFM of the HVAC system and the difference is what will need to be by-passed. A by-pass is required when any zone cannot handle at least 2/3 of the total CFM. (Total CFM – Smallest zone CFM = By-pass CFM)

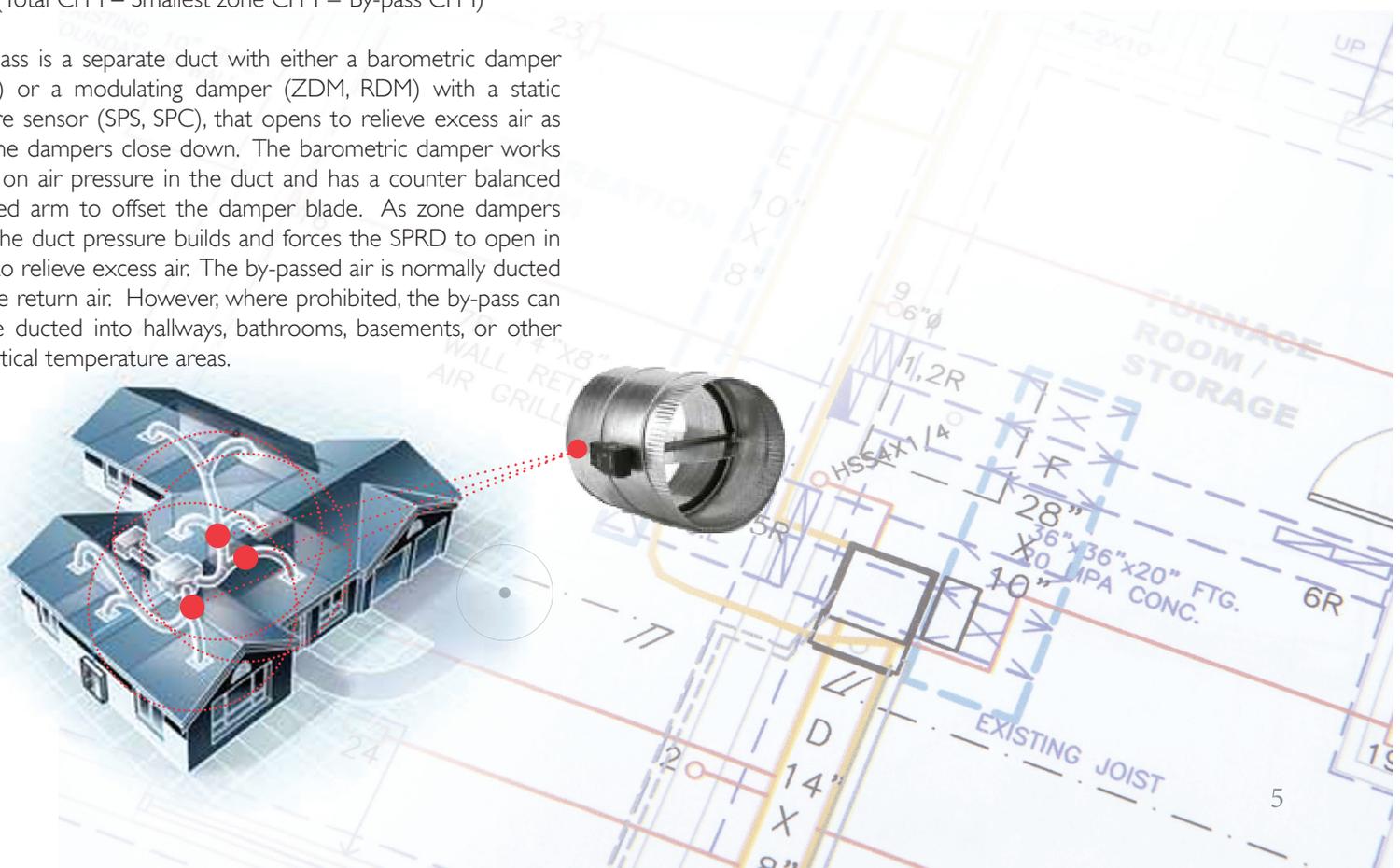
A by-pass is a separate duct with either a barometric damper (SPRD) or a modulating damper (ZDM, RDM) with a static pressure sensor (SPS, SPC), that opens to relieve excess air as the zone dampers close down. The barometric damper works strictly on air pressure in the duct and has a counter balanced weighted arm to offset the damper blade. As zone dampers close, the duct pressure builds and forces the SPRD to open in order to relieve excess air. The by-passed air is normally ducted into the return air. However, where prohibited, the by-pass can also be ducted into hallways, bathrooms, basements, or other non-critical temperature areas.

VARIABLE SPEED HVAC

Today more and more furnaces and air handlers are coming with variable speed blowers. These increase the volume of air when the unit sees an increase in static in order to maintain the efficiency of the unit. When zoning a variable speed unit, the unit will see an increase in air pressure every time a zone damper closes. This will cause the blower to speed up, add noise and become drafty in the open zones. This is where the Modulating By-pass damper is used with the SPS or SPC (pressure sensors). When zone dampers close the static pressure sensor will sense the rise in static as the blower from the unit begins to increase. The sensor will then open the modulating by-pass damper. As the by-pass opens and relieves the excess air, the blower will sense this and begin to slow. During this the by-pass damper will modulate to seek equilibrium with the blower as to keep a balanced airflow.

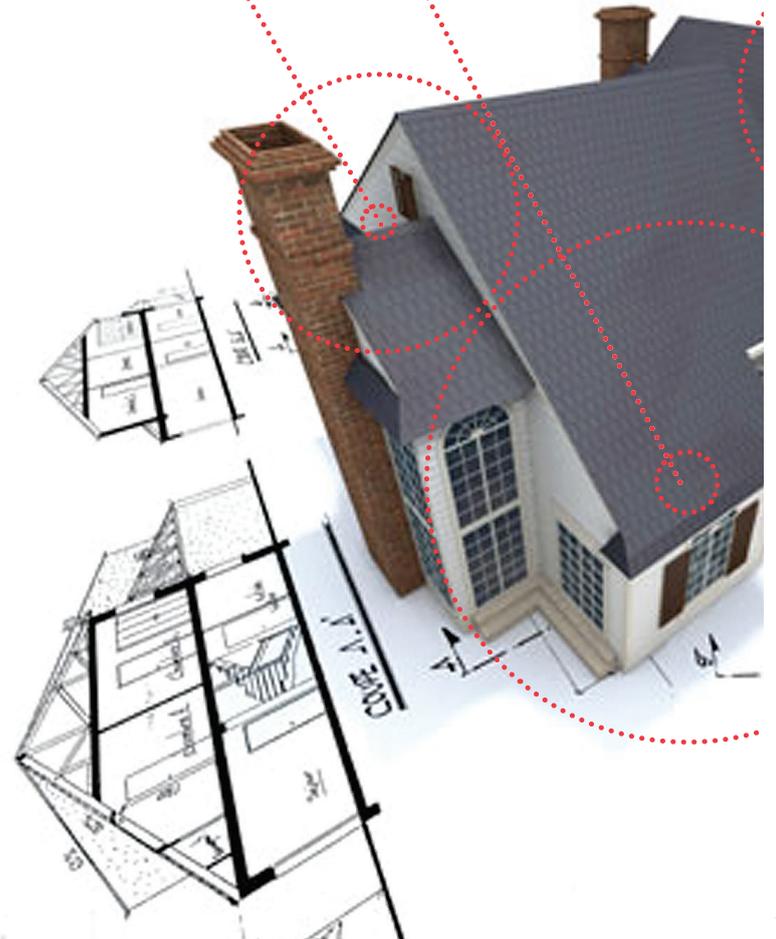
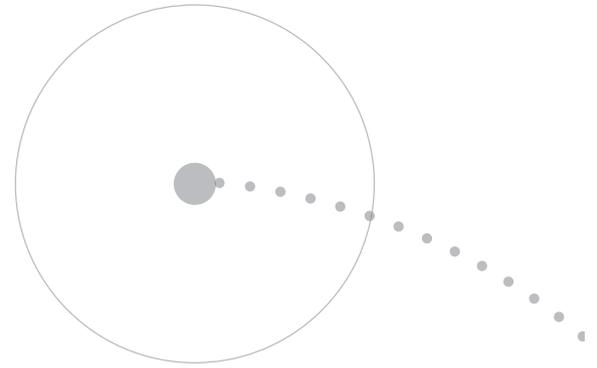
For over 50 years ZONEFIRST has lead the way in developing innovative solutions for HVAC zoning. The importance of common sense duct design principles and creative ingenuity is what makes ZONEFIRST the first choice in providing complete zoning solutions for any system.

ZONEFIRST OFFERS MORE INFORMATION ON ITS ZONING DESIGN MANUAL WHICH IS AVAILABLE ONLINE AT WWW.ZONEFIRST.COM



WHERE TO START YOUR ZONING DESIGN?

- <1> Determine the size and type of HVAC equipment to be zoned. Our Zoning Systems are compatible with just about any forced air system.
- <2> Determine the number of zones you will be installing. Number of zones indicates how many thermostats will be needed. For example, a four zone system will need four thermostats. If the job is a retrofit, we recommend using wireless thermostats to eliminate the need to run thermostat wire to each room/zone.
- <3> Select a compatible control panel which will satisfy the number of zones you will be installing and type of dampers you will be using. Also, choose a panel that will work with your equipment.
 - <a> The control panel is the central control system which reads a thermostat call, energizes the appropriate HVAC equipment, and then activates the correct motorized dampers to either close or stay open depending on the specific zone thermostat call. All of this is set on installation and requires no manual control once it is set.
 - The control panel will also have to be compatible with the type of motor you use with the dampers. ZONEFIRST has three (3) motors to choose from. Our MDM motor which is a 3-wire, 24VAC power close/power open, our MSS motor which is a 2-wire, 24VAC power close/spring open, and our most popular which is the MPI2. The MPI2 is a 12VDC motor and they are connected through modular RJ 11 phone cords. Making this zoning system the easiest and fastest to install on the market!
- <4> Determine how many, what type and what size dampers you will need. The Plug-IN dampers can be daisy chained together allowing for up to 10 dampers on each zone. The spring return motors can be slaved together as well however over five (5) dampers total, require a larger VA transformer.
- <5> Determine if you need a by-pass or not. A By-pass damper is usually installed to release the buildup of static pressure in the duct due to zones closing. ZONEFIRST offers both a barometric and motorized by-pass damper.



PUTTING A SYSTEM TOGETHER

When deciding to zone to solve a problem or zoning a complete HVAC System, there are two basic types of zoning methods, Independent and System Zoning. The difference is whether there will be control of the HVAC Equipment or not.

Independent Zoning is used typically to solve a problem room or zone that gets too much conditioning all of the time. Here a damper and thermostat is simply used just to shut off the ducts when the zone temperature is reached. An Independent Zone has no control over the HVAC System and open and closes dampers from independent thermostats. It is recommended to use the 24V Spring Return Dampers that can be wired directly to any 24V Thermostat for any independent zone. It is important to insure that no more than 20% of the air flow is affected when the independent zones are closed. If more than 20% of the system is controlled independently, add a zone control panel and make it a system.

System zoning uses a zone control panel that controls the HVAC Equipment. This panel cycles the heating, cooling and fan based on the demands of the zone thermostat and opens and closes the zone dampers accordingly. ZONEFIRST offers several MASTERZone™ Control Panels that can control from 2 to 103 Zones for virtually any type of HVAC System.

When ordering a Zone System check to make sure you have the following:

A MasterZone Control Panel

- For the type of equipment being zoned and number of zones.
- Kits are available that include Sensors and a transformer.
- Zone Damper(s) for each zone.

Zone Damper(s) for Each Zone.

- May be one or more dampers. Up to Five(5) 24V Dampers/40VA Transformer
- When using the Plug-In Dampers up to 10 Dampers may be used on each zone.

Zone Thermostat for Each Zone.

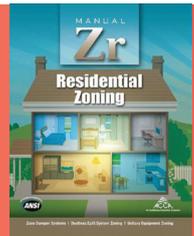
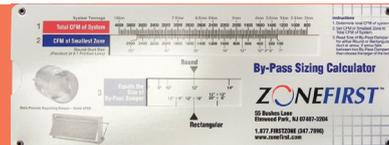
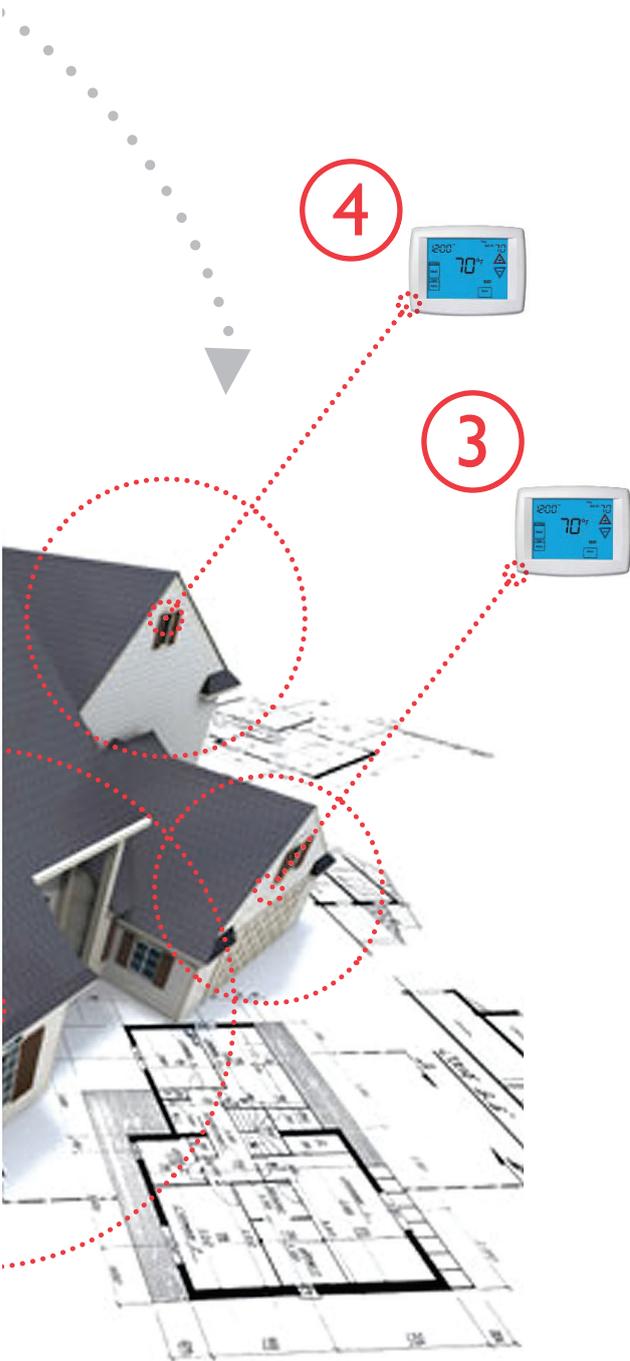
- Any standard thermostat using Y-G-R-W and similar terminals.

By-Pass Damper:

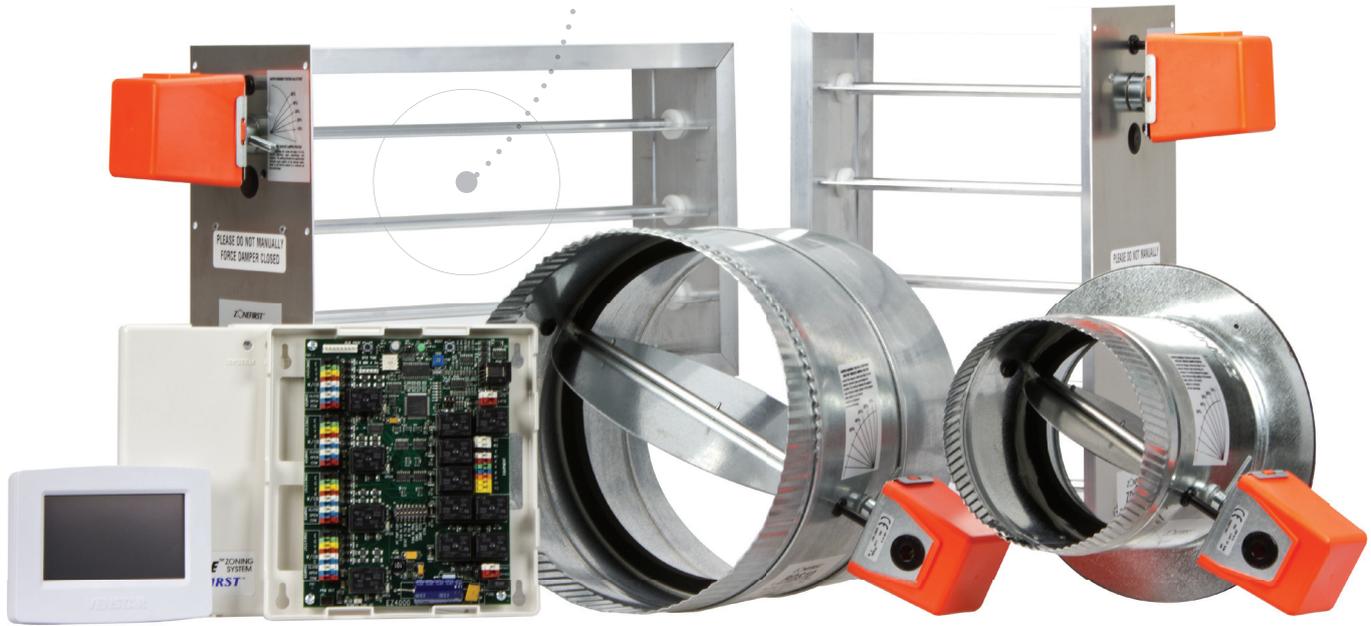
- Based on the size of the system and the smallest zone.
- Both Barometric and Modulating are available.

ZONING DESIGN RESOURCES:

To learn more about Zoning System Design please reference the following resources. ZONEFIRST has its own simplified Design Guide on designing and sizing duct systems available for download on its website, www.zonefirst.com/design. ZONEFIRST offers a simple By-Pass Calculator for sizing a by-pass damper and is available by simply calling us at 1-877-FIRSTZONE(347-7896) and we'll send you one. Lastly ACCA has its NEW Manual Zr providing all the science behind designing zoning systems. This is available from the ACCA Store, www.acca.com/store.



TWO WIRE SPRING RETURN ZONE DAMPER SYSTEM



SPRING RETURN

The Spring Return Dampers have 24volt, 2-wire motors which power the damper typically closed and spring returns it back to open for fail safe operation. These dampers can also be reversed in the field using the same motor. Spring Return motors are used with ZDS, ZDB, RDS, and RTS dampers.

MODEL MMZ3 - Zone Control Panel



Model MMZ3

Panel is a 2 and 3 zone, single stage heating and cooling control panel. This electronic panel provides the simplest zoning functions and works with all standard heating and cooling thermostats.

The MMZ3 is designed to use a minimum of wires to make zoning simple and affordable. Each zone uses a standard 4/5 wire (Y-G-R-W-C) thermostat. All terminal blocks are push-in connection, making wiring even simpler and no need for a small screwdriver; as with all other zoning panels. The state-of-the art surface mount technology for all electronic components makes for a highly reliable control panel.

MODEL H32 - Zone Control Panel



Model H32

H32 Uni-Zone Control Panel is a 3 zone control panel that universally controls single stage, two stage and heat pump systems. This new panel has multi-function capability by setting the panels DIP switches for each specific type of operation. The H32 also has a built-

in fossil fuel kit for the capability of using dual fuel heat pumps. Other H32 features provide an adjustable built-in second stage timer which eliminates the need for two stage thermostats and substantially reduce the overall cost of the zoning system. The H32 is compatible with both conventional and heat pump thermostats.

ZONING SYSTEMS

MODEL MZS4 - Zone Control Panel



Model MZS4

The MZS4 panel is a 2, 3 or 4 zone control panel that is capable of controlling single stage, two stage, and heat pump systems. This multi-function board uses any 4-wire thermostat. Two stage and heat pump thermostats are NOT required, however Heat Pump thermostats can be used to remotely control the Emergency Heat. The MZS4 panel is the most cost effective and versatile zone controller on the market today. Using surface mount technology, its compact size is full of features not found in any other zone control panel.

The MZS4 provides the basic function of zoning by being the central control panel that all zone thermostats, zone damper motors, and HVAC equipment wire into. This panel can be expanded up to 10 zones by adding adder panels (Model MZA2).

MODEL ZDS - Zone Damper Side Mount



Model ZDS Spring Return Damper

- Extruded Aluminum
- Parallel Blade

Open, Spring Closed

- Power Closed (30 sec)
- Spring Open (5 sec)
- Easily Adjustable Minimum Position
- Field convertible to Power
- Order as ZDSwwhh (width x height)
- Motor/End Plate on Height Dimension

MODEL ZDB - Zone Damper Bottom Mount



Model ZDB Spring Return Damper

- Extruded Aluminum
- Parallel Blade

Open, Spring Closed

- Power Closed (30 sec)
- Spring Open (5 sec)
- Easily Adjustable Minimum Position
- Field convertible to Power
- Order as ZDBhww (height x width)
- Motor/End Plate on Width Dimension

MODEL RDS - Round Damper

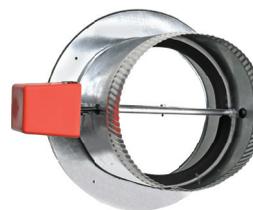


Model RDS

- Spiral formed duct and round single blade damper
- Gasket seal for low leakage
- 24V Ac Motor, 8W Power Closed (30 Sec.) Spring Return Open (5 Sec)
- Two Wire Operation
- Field Convertible to Power Open, Spring closed
- Easily adjustable minimum position

Order as RDSdd (two digit diameter)

MODEL RTS - Round Take-Off Damper



Model RTS

- Combination Take-Off Collar and Motorized Damper
- Adhesive gasket on flange to seal against the side of a duct.
- Gasket seal for low leakage
- 24V Ac Motor, 8W Power Closed (30 Sec.) Spring Return Open (5 Sec)
- Two Wire Operation
- Field Convertible to Power Open, Spring closed
- Easily adjustable minimum position
- Flat adhesive back for tight seal

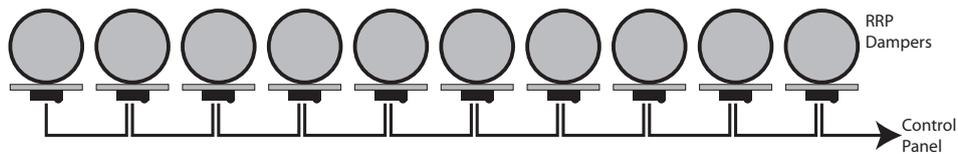
Order as RTSdd (two digit diameter)

PLUG AND PLAY ZONING SYSTEM



PLUG AND PLAY

ZONEFIRST'S Plug-In-Play Zoning System is the easiest and fastest system to install on the market. The Plug-In Control Panels have EZ Wiring and color-coded terminal blocks enabling you to cut your installation in half. These Panels are used exclusively with our Plug-In Dampers. Plug-in dampers use 12volt dc motors and are connected to one another using modular cord (25' supplied with each damper) and can be daisy chained together giving you the option to have 10 dampers on each zone as shown below.



MODEL MMP2/3 - Zone Control Panel



Model MMP2
The Mini-MasterZone® Zoning Panel is a 2 zone only, single stage heating and/or cooling control panel. This electronic panel provides the simplest zoning functions and works with all standard heating and cooling thermostats, using Y-G-R-W-C. The NEW MMP2 controls only the

New Plug-in Zone Motors that use modular cords, supplied with each damper. The MMP3 control panel can be used for 2 or 3 zone systems.

MODEL H32P - Zone Control Panel



Model H32P
H32P Uni-Zone Control Panel is a 3 zone control panel that universally controls single stage, two stage and heat pump systems. This new panel has multi-function capability by setting the panels DIP switches for each specific type of operation. The H32P also has a built-in fossil fuel kit for the capability

of using dual fuel heat pumps. Other H32P features include an adjustable built-in second stage timer which eliminates the need for two stage thermostats and substantially reduce the overall cost of the zoning system. The H32P is compatible with both conventional and heat pump thermostats.

ZONING SYSTEMS

MODEL MDP3 - Digi-Zone™ - Control Panel



Model MDP3

The NEW Digi-Zone™, Model MDP3, Control Panel will control 2 or 3 Zones on any HVAC System, up to 3 Stages of Heating and 2 Stages of Cooling. The MDP3 will also control Heat Pumps and Dual Fuel as well as many geothermal

heat pumps. The digital display is a menu driven screen that guides the installer through the settings for each type of system as well as accurately sets the timings and sensor temperature settings.

MODEL MZP4 - Zone Control Panel



Model MZP4

Panel is a 2, 3 or 4 zone control panel that is capable of controlling single stage, two stage, and heat pump systems. This multi-function board uses any 4-wire thermostat. Two stage and heat pump thermostats are NOT required, however Heat Pump thermostats

can be used to remotely control the Emergency Heat. The MZP4 panel is the most cost effective and versatile zone controller on the market today. Using surface mount technology, its compact size is full of features not found in any other zone control panel.



Model MDP3 - 2 Zone Adder Panel

This adder panel is used exclusively with the MDP3 & can expand up to 103 zones.

MODEL OZD - Outlet Zone Damper



Model - OZD

- Aluminum opposed blade damper
- Inserts into the outlet or opening of the duct into a room
- Self-contained Plug-In Motor
- 100' Plenum rated cable included

MODEL ZDSP & ZDBP - Zone Dampers



Model ZDSP - Side Mount Damper

Motor and end plate mounted on shorter dimension to insert from the side of the duct. Order as ZDSPwwhh (motor on height dimension)



Model ZDBP - Bottom Mount Damper

Motor and end plate mounted on longer dimension to insert typically from the top or bottom of the duct. Order as ZDBPhhww (motor on width dimension)

MODEL RTP & RDP



Model RTP - Round Take-Off Damper

- Combination Take-Off Collar and Zone Damper
- Gasket seal for low leakage
- Adhesive flange for air tight seal
- Order as RTPdd (two digit diameter)



Model RDP - Round Damper

- Spiral formed duct and round single blade damper
- Gasket seal for low leakage
- Order as RDPdd (two digit diameter)

MODEL RRP - Retro-Round™ Damper



Model RRP

- 12VDC Motor used with Plug-In Control Panels Only
- Power open-close Motor for Long Life
- LED Position Indicator
- Order as RRPdd (two digit diameter)

DAMPERS AND CONTROLS

MODEL SPRD - Static Pressure Regulating Damper



SPRDwwhh
(width x height)



SPRDdd (diameter)



RTBdd (diameter)

The SPRD and RTB are barometric by-pass dampers used to relieve excess air on zoning systems. These dampers work off the air pressure in the duct system to open as the air pressure increases when zone dampers close down. These dampers are adjusted by a counter balanced, weighted arm. The weight and the arm can be adjusted to add pressure to the damper blade to only open as the zone dampers close off air to their zones. When all zone dampers are open the SPRD dampers should be adjusted so they are closed and only open when the air flow through the HVAC system decreases as zone dampers close. Since almost every system is different with varying duct sizes and lengths, the by-pass dampers are best adjusted upon commissioning of the system with the blower/fan operating at full capacity. The SPRD is available in both rectangular/square and round damper sizes. The SPRD are for in-line duct applications. The rectangular/square SPRD simply inserts into any duct by cutting a 2" slot in the side of the duct and inserting the damper and securing with self-tapping sheet metal screws provided. The round SPRD is a short length of spiral duct that can be connected to either metal or flex duct. The NEW RTB is a combination take-off collar and damper. The RTB has an adhesive foam seal to flush mount against any plenum or duct and either connected with a length of duct into the return, common area or left open into a non-critical conditioned area.

Calculating Bypass Air Requirements

$$T_{CFM} - S_{CFM} = B_{CFM}$$

Total CFM Smallest Zone Bypass CFM

Square and Rectangular Sizes

Size	CFM	Size	CFM
12"x8"	800	20"x 8"	1,600
12"x10"	1,000	20"x10"	2,000
12"x12"	1,400	20"x12"	2,400

Round Sizes

Size (Dia.)	CFM	Size (Dia.)	CFM
7"	200	14"	1,600
8"	400	16"	2,400
9"	600	18"	3,000
10"	750	20"	4,000
12"	1,000		

MODEL MBD - Manual Balancing Dampers



MBDwwhh (width x height)



MBDdd (diameter)

The NEW Manual Balancing Dampers are sometimes used with the barometric by-pass dampers to add back pressure to the duct system and control the amount of by-pass air. Often when the by-pass is ducted directly into the return at the plenum, too much air is by-passed through a barometric damper. This can starve longer duct runs for air and cause the ZPS to activate cutting off the HVAC. The MBD solves this by providing the back pressure to insure proper airflow reaches the far away zones and insuring only excess air is by-passed. The MBD is what is referred to in ACCA's New Manual Zr for Zoning as a hand damper.

MODULATING BYPASS DAMPERS AND CONTROLS



ZDBM



ZDSM



RTM

RDM

Modulating by-pass dampers are similar to ZONEFIRST's other ZD and round dampers except for the motor. The MDM motor is used on these dampers and is a 24VAC, 3-wire power open/ power close damper. These are used with either the SPS or SPC to provide damper control of by-pass air. This quick acting, reversing motor responds quickly to the changes in air pressure in the duct to maintain a constant amount of static during changing condition of various zone calls. These dampers can also be used as two-position open/close dampers and have higher torque values than the spring return dampers.

Model SPS - Static Pressure Switch

The SPS is used to sense duct pressure to control modulating damper to provide more accurate control of by-pass air on a zoned system. The SPS has two fixed sensors factory set at 0.2" and 0.3" S.P. The modulating by-pass damper is wired to open above 0.3" and close below 0.2". Between these pressures the damper stops.



Model SPC - Static Pressure Control

The SPC controls the modulating dampers similarly as the SPS however is adjustable and has a wider control range than the SPS. The SPC is adjustable from 0.08" S.P. to 0.8" S.P. Above the setpoint the damper opens and when the pressure drops below the setting the damper stops and modulates open or closed to maintain pressure.



THERMOSTATS AND DAMPER MOTORS

MODEL TPS – Digital Programmable Thermostat



The TPS is a battery powered, 5-1-1 or 5-2 Day, setback thermostat and can be used on any zone of the new and older relay based zone control panels. The built in changeover switching will have to be switched between modes when the central changeover control is switched on older panels. The terminal connections on this thermostat are T-O/B-G-R-W.

MODEL TDS – Digital Thermostat



The TDS is a digital, single stage, 24V powered thermostat. This heating-cooling thermostat has only a single set point and is manual changeover with no setback. The TDS also has terminal connections Y-O/B-G-R-C-W. This stat can also control a single damper.

MODEL TTS/TTH – Digital Touchscreen Single Stage and Heat Pump



ZONEFIRST offers two NEW Touchscreen Thermostats for its zoning systems. The TTS for single stage systems and the TTH for Heat Pumps. Both have large LCD touchscreen for easy viewing and simple programming. The thermostat can be programmed to be a non-offset thermostat, a setback thermostat for up to 7 day programming with features such as keypad lockout and limited range control. This attractive thermostat can be hard wired or battery powered and configured for manual as well as automatic changeover.

MODEL WTR – Wireless Thermostat and Receiver



The NEW Wireless Thermostat and Receiver now make zoning easier to install in existing homes and buildings. The WTR package includes a wireless thermostat that can be mounted or placed anywhere, eliminating the need to run wires to the thermostat. This saves hours of labor on any installation. A remote receiver is located next too or near the zone control panel and is wired to the corresponding zone on the panel. The WR (wireless receiver) wires to the zone thermostat terminals on the panel. Best of all, the thermostat is a digital programmable thermostat providing 4 settings per day and automatic changeover.

MODEL MSS – Spring Return Motor



The MSS is the replacement spring return motor used for the RDS, RTS and ZD dampers. The 24V, (2)-wire motor powers the damper typically closed and spring returns it back to open for fail safe operation. The dampers can be reversed in the field using this same motor as well. The MSS replaces the MSR, RDM and RDMH motors.

MODEL MPI2 – Plug-In Damper Motor



The MPI2 is the replacement motor for all Plug-In Dampers. This motor is specifically designed for use only with the dampers in this catalog and is for replacement only. This motor has a built in two color LED to indicate the motor's position (GREEN for open, RED for closed). The MPI2 wires use a modular cord supplied with each damper.

MODEL MDM – Power Open-Closed Motor



The MDM is a three (3) wire power open- power closed damper motor with built in LEDs to indicate the damper's position (GREEN for open, RED for closed). This motor is used on the ZDM, RTM and RRM dampers and is used with the SPS and SPC static pressure controls for by-pass. This motor is also used on the RRM damper.

MODEL MST – AOB D Replacement Motor



The MST motor is used on all two-postion AOB D style dampers as well as the older model TAT registers and diffusers. It can also be used as a replacement motor the the EWC Controls Model MAN motor. The motor is 24 volts, 6 watts with end switches and has a 30 second opening and closing.

ACCESSORIES

MODEL CD - Control Dampers



CDwwhh (width x height)



CDdd (diameter)

The CD series of control dampers are ZONEFIRST's well made ZD and RD dampers less motor. Each damper has a 1/2" shaft suitable for using with most direct coupled actuators. The square and rectangular dampers are an all aluminum parallel blade damper and the round is a spiral formed duct and single blade damper with an internal gasket seal.

CDwwhh (width x height)

CDhhww (height x width)

CDdd (diameter)

MODEL AFC - Anti-Freeze Control



The AFC prevents the air conditioning coil from freezing due to low air flow, dirty filters, low refrigerant pressure, etc. The AFC snaps onto the suction line as close to the evaporator coil as possible and breaks the compressor circuit when the suction line drops below 38° F and re-makes the circuit at 48°F. Recommended when by-passing air into the return duct.

MODEL T24 – 24 Volt 40VA Transformer



The T24 is a 24 Volt AC, 50/60Hz, 40VA Transformer used to provide low voltage power for any 24VAC damper and/or control panel. This UL rated transformer mounts on a standard 4"x4" electrical box and is supplied by 110-120VAC.

MODEL 4PDR – 4 Pole Double Throw Relay



The 4PDR is a 24 Volt 4 Pole Double Throw Relay used for various control functions to control dampers. Most commonly this is used when multiple AOB series dampers are required to be slaved together to operate from a single zone. It also is used when more than 4 or 5 spring return dampers are slaved together and isolates power transformers from requiring phasing. The 4PDR socket has screw terminals and can be mounted on a DIN rail and uses the PIRR Relay.

MODEL PIRR – Plug-In Replacement Relay



The PIRR is the replacement relay for many older TAT Mark IV, V, VII, VIII, X, XXXI, II and MM-2/3 Zone Control and Accessory Relay panels. The 24 Volt, 4PDT relay is easily replaceable by simply un-plugging the old relay and replacing by plugging in the new one. This relay is the same as the RMABS relay.

MODEL ZPS and OAS



The Zoning Plenum Sensor is a duct mounted sensor used with the ZONEFIRST MasterZone™ Control Panels. The ZPS senses the supply air plenum temperature and protects the HVAC from possible over temperature as zone dampers close and/or when a by-pass is used. The ZPS protects the equipment by cycling off the heating or cooling call when its limit temperature is reached and cycling it back on when the plenum temperature changes back 10F.

The Outdoor Air Sensor is used with the H32/H32P and MDP3 panels when used with dual/fossil fuel heat pumps. The OAS is placed outdoors to switch between the heat pump compressor and the furnace, based on a temperature setting made at the control panel.

freshex[®]

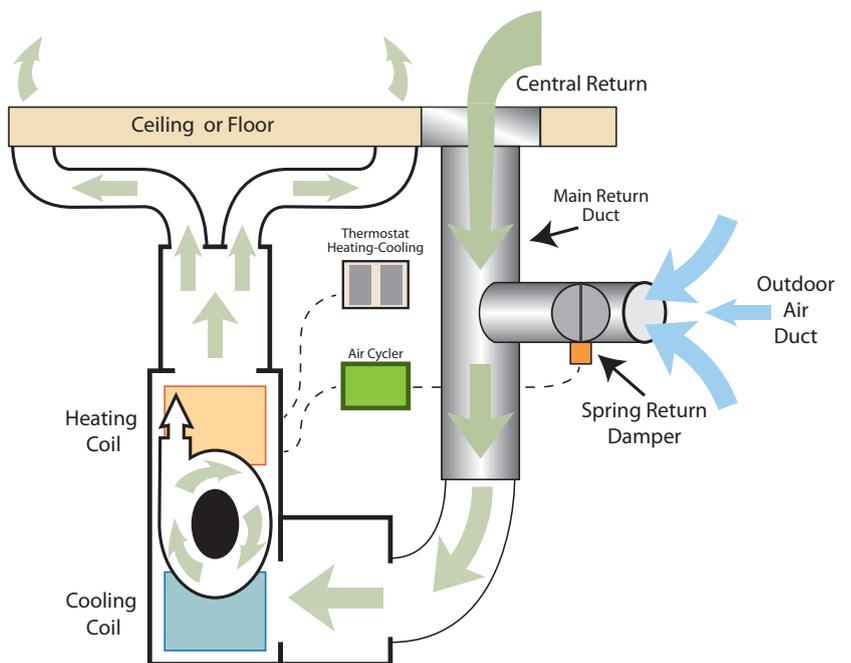
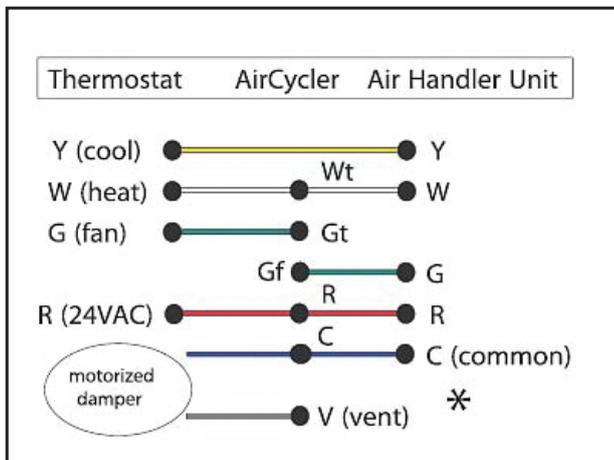


The Air Cycler is a low cost control for fresh air intake and ventilation , Air Cycler is used as a low cost alternative to the more expensive ERV/ HRV. By periodically operating the HVAC System fan the Air Cycler vastly improves the temperature, humidity and filtration system in the home or office. It provides more circulation throughout the building and eliminates stagnant air and odors by inducing fresh outdoor air. The Air Cycler is a “smart” device as it knows when the central fan operates and activates the fan only after a selected period of time during which the fan has not operated.

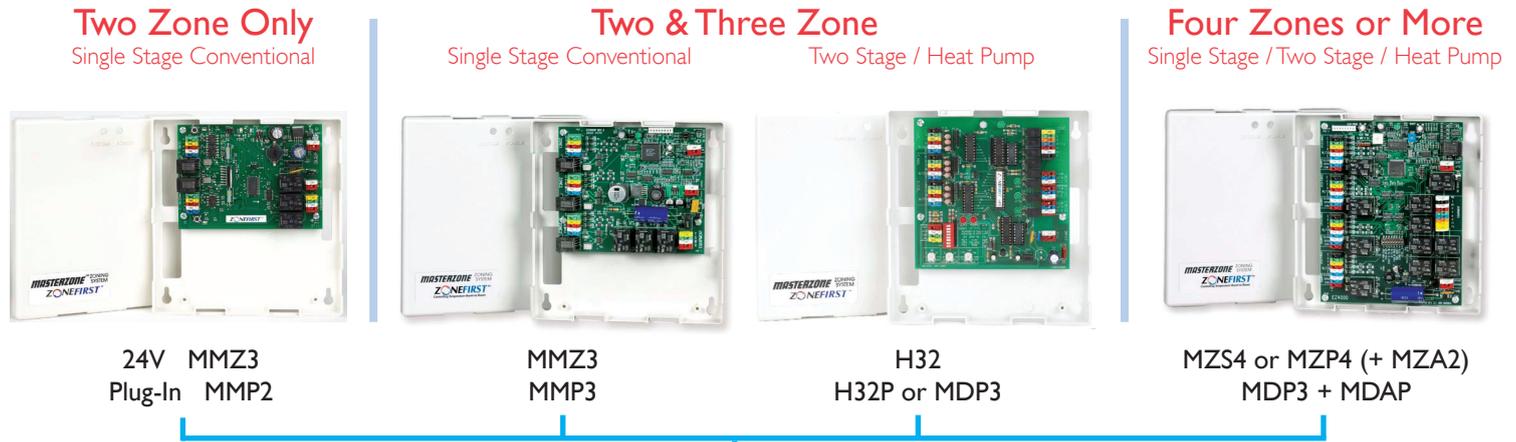
The Air Cycler has a 24VAC output circuit that controls a motorized damper, that is ducted to the outdoors, to effectively regulate fresh air ventilation when the Air Cycler is on. The damper is opened for a selectable ON time and closed for a selectable OFF time, repeating while the fan is on.

SPECIFICATIONS

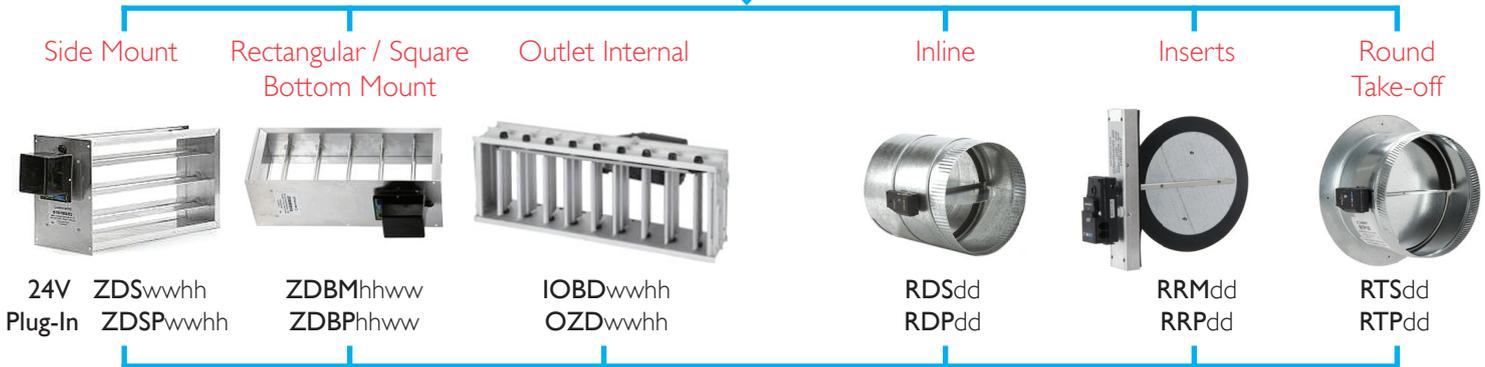
- Operating Voltage – 24VAC
- Fan ON and OFF delay settings
- Vent ON and OFF delay settings
- 1 to 199 minutes in 1 minute increments, plus an unlimited setting for both ON and OFF



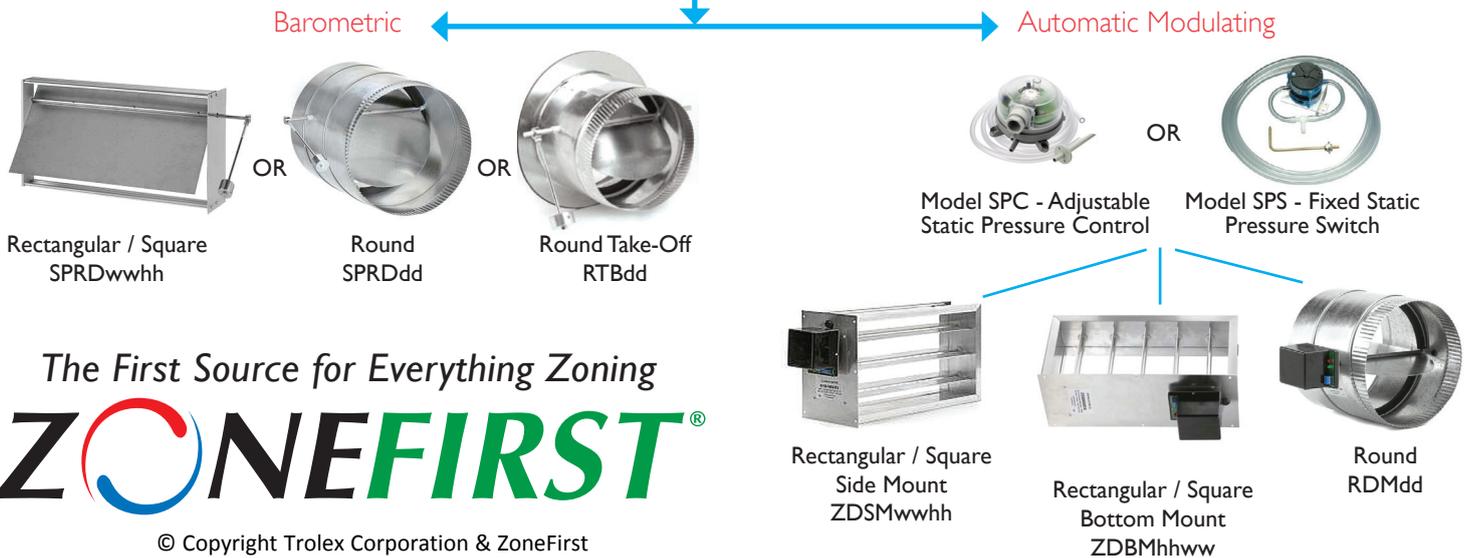
SELECTION GUIDE



Zone Dampers



By-Pass Dampers



The First Source for Everything Zoning
ZONEFIRST[®]

© Copyright Trolex Corporation & ZoneFirst
 20 Bushes Lane - Elmwood Park, NJ 07407 | 1-877-FirstZone (347-7896)
ZoneFirst.com | Shop Online at ZoneDampers.com | fb.com/ZoneFirst

