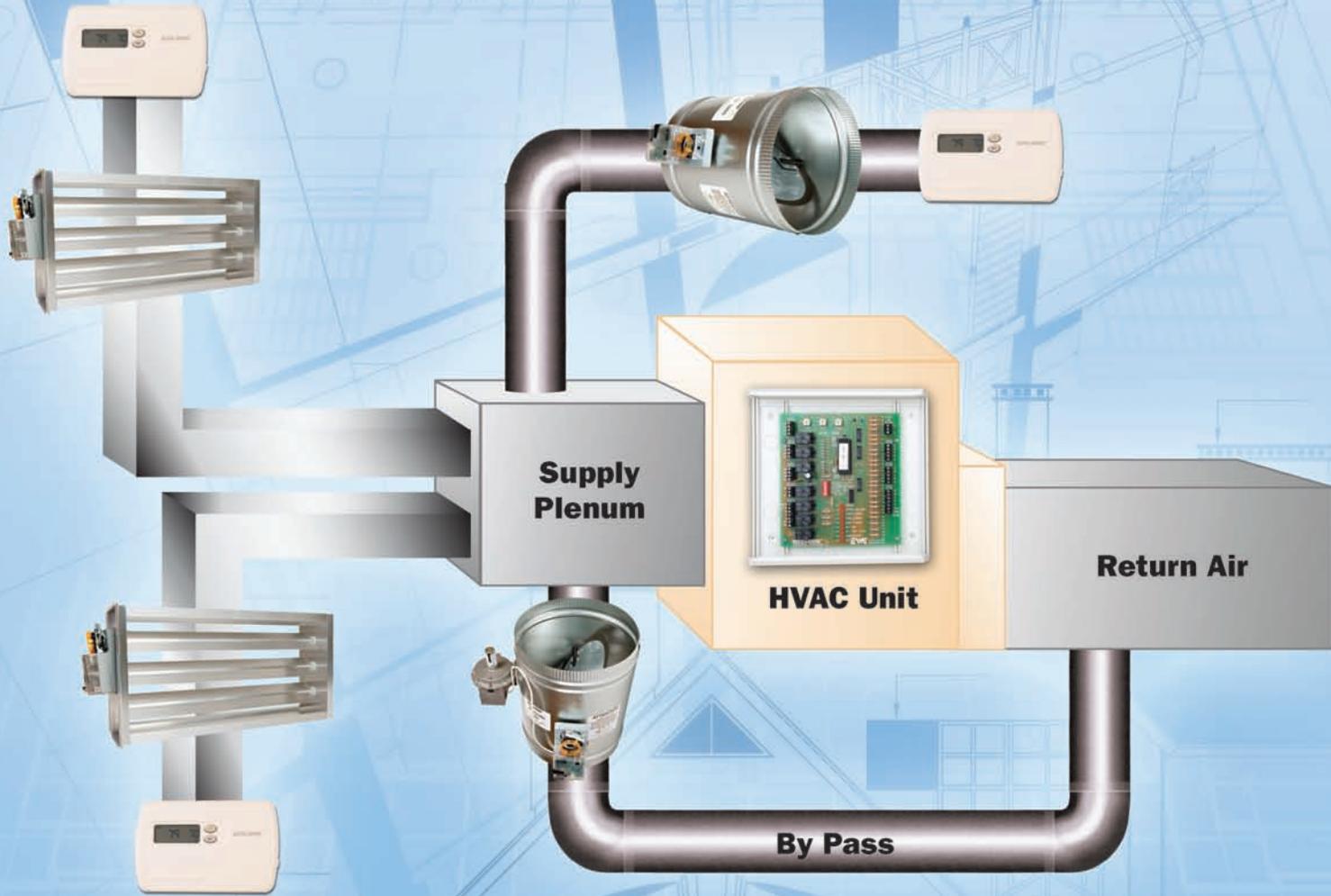


# ULTRA-ZONE®

LP #114  
Effective  
1/1/09

## Forced Air Zone Controls



Excellence Without Compromise

**EWV**<sup>®</sup>  
CONTROLS INC.

Proudly Manufacturing in the USA

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## About EWC Inc.

In early 1961, EWC Inc. was formed as a manufacturing company of power transformers for military and commercial use. Today, EWC Inc, transformers are located on smart guided missile systems, helicopters, airplanes, the space shuttle and many other applications. The successful growth of this business allowed EWC to expand its manufacturing capabilities and enter into the HVAC industry.

Our vast experience in designing and manufacturing military components and power transformers for all applications led us to form EWC Controls in 1988. Today, homeowners, wholesalers and contractors rely on our expertise and experience to provide the most reliable comfort solutions for all applications.

In 1998, EWC Controls acquired the Autoflo line of whole house humidifiers. This has proven to be a very successful acquisition for EWC Controls and our customers. The purchase enhanced our product offering which allows our customers to provide homeowners with a complete comfort package.

In 2000, EWC Controls introduced the first damper with directional LED's to help our dealers. In 2001, we introduced the most efficient whole house steam humidifier. 2004 saw EWC Controls introduce the most complete comfort guide and package for wholesalers and contractors, as well as the first digital humidistat for whole house humidifiers.

As EWC Controls continues to grow, we will continue to make product improvements and enhancements. All of us at EWC look forward in continuing to develop future comfort solutions for our industry.



# How To Order An Ultra-Zone System

## Control Panel



**1 Stage Heat/Cool**  
**2 Stage Heat/ 1 Stage Cool**  
2-3 zones - NCM-300  
For larger zone systems  
See BMPlus series

**1 Stage Heat/Cool**  
**2 Stage Heat/2 Stage Cool**  
2-3 zones (1) BMPlus 3000  
4-5 zones (1) BMPlus 5000  
6-7 zones (1) BMPlus 7000  
For larger zone systems  
See UZC series

**1 Stage Heat/Cool**  
**2 Stage Heat/ 2 Stage Cool**  
**3 Stage Heat/ 2 Stage Cool**  
**4 Stage Heat/ 2 Stage Cool**  
2-4 zones (1) UZC-4  
5-6 zones (1) UZC-6  
7-8 zones (1) UZC-8  
9-10 zones (1) UZC-10  
11-12 zones (1) UZC-12  
13-14 zones (1) UZC-14  
15-16 zones (1) UZC-16  
Up to 20 zones,  
2 zone increments

## Dampers



### Round

4"-20" URD (3-wire PO/PC))  
4"-20" RSD (2-wire spring return)



### Rectangular

(W"xH") ND (3-wire PO/PC)  
(W"xH") ND-RSD (2-wire Spring Return)  
Motor is always mounted on  
2nd dimension

## By-Pass Dampers (If Necessary)



**Electronic (Modulating)**  
10"-18" EBD (Round)  
W"xH" EBD Rectangular  
Any Size (Call Factory)

**Round Barometric**  
8"-16" PRD-RD

**Rectangular Barometric**  
W"xH" PRD

## Zone Thermostats



**Digital Programmable  
Auto Changeover Touchscreen**  
EWT-3102

**Digital Programmable  
Auto or Manual Changeover**  
EWT-3707

**Digital Non-Programmable**  
EWT-3611

## Transformer



40VA for every (20) URD and ND dampers  
40VA for every (5) RSD and ND-RSD dampers

## *Ultra-Zone controls - benefits*

### **Why Use An Ultra-Zone System?**

The Ultra-Zone zone control systems provide personalized comfort of heating and air conditioning equipment for homes and offices.

The Ultra-Zone system utilizes motorized dampers controlled by room thermostats to selectively control the temperature for each zone of the home or building. This is called “zoning.”

We are zoning off areas so that we can allow tighter control of the heating and cooling. This is very similar to the lighting and plumbing systems in a house.

You do not have one main light switch that turns ‘on’ and ‘off’ all the lights in the house, nor do you have one faucet that turns ‘on’ and ‘off’ all of the water in the house. Each system has separate controls for each room and fixture.

The Ultra-Zone system will allow that same degree of control for your heating and cooling.

#### **Total Comfort**

The Ultra-Zone system permits personalized comfort of each zone – providing temperature control where you want it... when you want it...

#### **Added Convenience**

No more running ‘up’ and ‘down’ stairs to control the temperature. We will provide thermostats in each zone.

#### **Energy Savings**

Ultra-Zone systems can reduce energy costs by 25-30% or more. By using setback thermostats, you only pay for the heating and cooling when you want it.

#### **Common Sense**

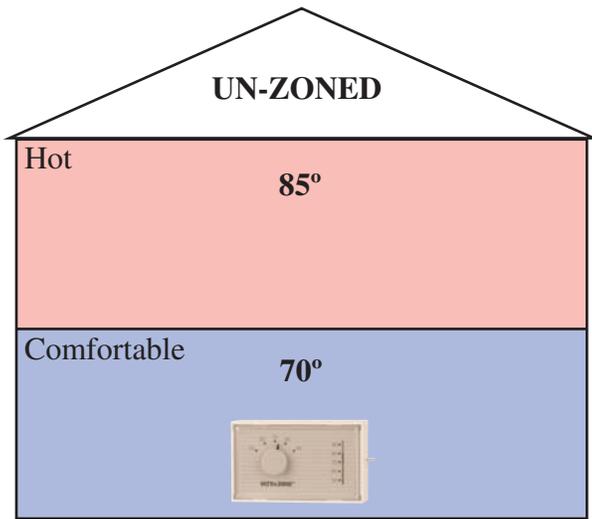
The heating and cooling equipment makes up the largest part of the monthly utility bill. Why not control these items the same way you do with your lighting and plumbing?

### **Why use an ULTRA-ZONE system over TWO units!**

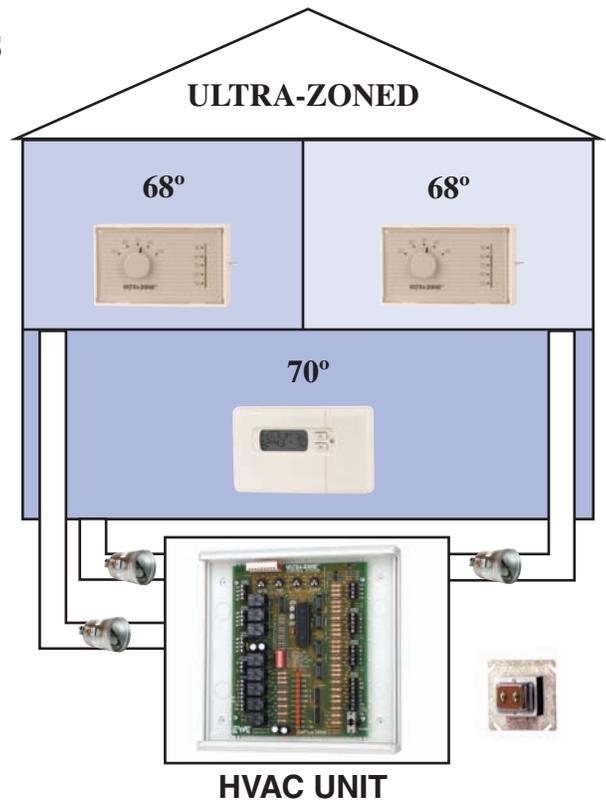
Some contractors are installing two heating and cooling units to try and satisfy the comfort needs of homeowners. This is an expensive alternative to an Ultra-Zone system. Two units cost more to install and maintain. One unit and a damper system is far less expensive than the cost of the second furnace. The cost of two units drastically increases when an additional air conditioner is installed. For example, in place of using two 2 ton heating-cooling sys-

tems, an Ultra-Zone system can be used with one 4 ton unit at an average savings of 30-35% of the overall cost. This cost reduction comes from eliminating duplicate work and installations. With one unit, the installation is much faster and the material will cost less. With lower costs to the homeowner and more comfort features as its benefit, the Ultra-Zone system is highly recommended over installing two units.

## WINTER CONDITIONS



*With one thermostat the entire house is one zone, making it difficult to control the comfort level throughout the house.*



*With multiple thermostats (zoning), occupants can maintain their desired temperature set point upstairs and downstairs independently of each other.*

### How the ULTRA-ZONE System works.

The purpose of the Ultra-Zone system is to provide total comfort in the home and office. Motorized dampers are “opened” or “closed” by thermostats based on the temperature set point of the homeowner. The damper system will control the airflow through the ductwork and deliver ONLY the desired air to the desired location. Each thermostat has the ability to turn on and shut off the heating and cooling. The Ultra-Zone system can accommodate over 20 zones. This means that over 20 thermostats can be installed in a home or building to control the temperature in each zone.

There are very few Ultra-Zone components that are needed to make the zoning system function. The control panel is the “brain” of the system. The zone thermostats allow independent temperature control, and the zone dampers control the airflow to the zone thermostats. A transformer is needed to power the system and occasionally a by-pass damper may be required.

The basic components of an Ultra-Zone system are:

- 1) A Control Panel
- 2) Zone Thermostats
- 3) Zone Dampers
- 4) Dedicated Transformer
- 5) By-pass Damper (If necessary)

Along with some thermostat wire, the above are the only components that are needed to install an Ultra-Zone system. The above diagram shows a typical installation with all of the components needed for a zoning system.

# Ultra-Zone Duct Design

When laying out a duct system for a job that will include an EWC Controls zoning system, many people think that there needs to be drastic changes to accommodate the zoning feature, this is not so. The ducts still need to deliver an adequate amount of CFM to the zoned area as they would if it were not zoned. The square footage of the home or building is not changing. What will change is the amount of square footage that will need to be heated or cooled at the same time. With zoning allowing for setback thermostats and different temperature settings throughout the home or building during the day and night, demand on the heating and cooling equipment should be a lot less due to zoning off areas that will not need to be heated or cooled during certain times of the day.

Since the heating and cooling requirements are now going to be controlled through zones, the concern is the excess pressure, or build up of pressure, from closed zones. What this means is that when some zones are in setback mode, the airflow to those zones will be shut off. The airflow will cause a pressure build up in the duct system which will be dealt with by using a form of "Bypass" to alleviate that pressure build-up. There are several ways of dealing with this excess pressure and what works for one contractor may not work for another, but EWC has some long standing rules that should be followed. These rules are important to follow to insure proper airflow throughout the system and to insure proper operation of the EWC Controls zoning system.

- 100% of the rated CFM must always move through the Air Handler when zoning with Heat Pumps and High cooling demand areas (i.e. Florida).
- Always assume the worst case scenario, which is the smallest zone will be the only one to call at any given time.
- EWC Controls recommends the use of the EBD (Electronic By-pass Damper) on all zoning installations. EWC Controls highly recommends the use of the EBD on all 3 zones or more applications, as well as systems that will exceed 2000 CFM.

As stated previously, there are several ways to accomplish these rules. EWC Controls recommends two types of methods for two different types of applications. The first application is on 2 and some 3 zone jobs when there is no room to install a bypass damper. On these jobs it is possible to oversize the supply ducts to handle the increased pressure of closed zones. For example, oversize each zone supply duct to handle 65%-70% of the CFM. This way when the other zones close, the one calling can handle the pressure safely. The supply ducts should never be oversized more than 20% of their intended capacity. (This method will reduce the velocity of the system so it is important to know your customer's expectations of the system.)

The BEST method for relieving excess pressure in a zoning system is the Bypass damper. This method will take the excess pressure from the supply duct and return it back to the return duct. This is done by tapping into the supply air and running a duct back to the return air and mounting a bypass damper in that run (see below). EWC Controls by-pass dampers are PRD & PRD-RD (barometric) and the EBD (electronic).

Figure 1

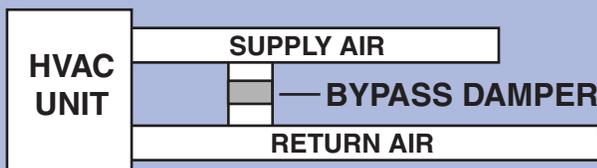
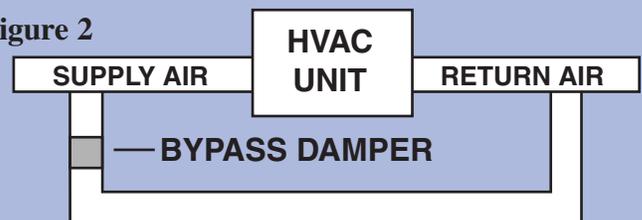


Figure 2



# Duct Sizing with Ultra-Zone

When tapping back into the return duct, the tap is recommended to be at least 6 ft. away from the equipment. The farther the better. This is done to ensure that the hot or cold air coming off the plenum has time to mix with the return air before going across the coil again. Temperature sensors are mandatory when using the bypass method. The sensors will prevent any damage to the equipment from overheating or coil freeze-up. EWC Controls includes the SAS (Supply Air Sensor) with every Ultra-Zone control panel.

If the bypass is used, it would be sized to handle the excess pressure build up under the worst case scenario rule. The reason we use the worst case scenario is that this is the worst possible condition of airflow. This condition will cause the most excess pressure build up that is possible. The calculation is done by taking the total CFM capacity of the smallest zone, let's say 600 CFM, and subtract that from the total CFM of the system, let's say 2000 CFM.

Total system CFM	2000
<u>Less smallest zone's CFM</u>	<u>-600</u>
Bypass amount CFM	1400

The bypass duct would be sized to handle the 1400 CFM which would be the excess pressure when only that one zone calls. The excess air can also be routed through the by-pass damper and "dumped" into an area that has access to an open return. This method will not provide the efficiency of the By-Pass Method. For by-pass damper CFM capacities, see the chart below.

The dump-zone method, which should only be used when it is not possible to install a connection between the supply and return, will provide some of the same benefits as the by-pass method. This method will still use a bypass damper, but it will not go through the return duct. The dump zone will take the excess pressure build-up and dump it into a non-critical area of the home. Non-

critical can be interpreted many ways, what EWC Controls has seen most commonly used are basements, entrance foyers, work shops or mechanical rooms. These areas are considered non-critical because they are non-living areas where temperature control is not as important. This method should be used responsibly by the installer. Determining what is a non-critical area is not to be taken lightly, this should be a thought-out process keeping the homeowners needs and expectations in mind.

Using some method of bypass is the most effective way to zone a home or building. Bypassing will accommodate the homeowners or occupants demand for a controlled environment. Some zoning systems call for bypassing the air into a zoned area, this will NOT allow for maximum comfort. This method allows the bypassed air to over shoot the thermostats temperature set point. What this type of system does is leave the zone dampers partially open when they should be fully closed, allowing for the bypass air to flow into an already satisfied zone. This will negate the effect of zoning and drastically reduce the comfort level, and savings potential of the home. Zoning is the control of the airflow from the HVAC equipment that allows for Individual Room Temperature Control. With proper installation there is no reason why an individual room cannot maintain a one degree differential from set point.

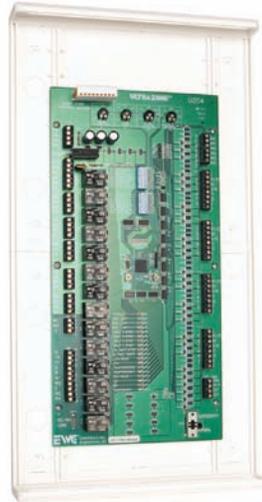
Duct design will be uniquely different from one zoning job to another and because of that, unfortunately there is no single way of laying out a zoning system. What EWC Controls has tried to do is to give you the critical information that is needed before a zoning system can be installed. We have also tried to show a few common techniques that are being used by others who are installing the EWC Controls zoning systems. These are just a few suggestions, other methods and techniques can be used if they are more successful for your applications.

Bypass Dampers and their CFM Capacity			
Rectangular		Round	
12"x8" PRD	1,000 CFM	8" PRD-RD	400 CFM
12"x10" PRD	1,200 CFM	10" PRD-RD	750 CFM
12"x12" PRD	1,400 CFM	12" PRD-RD	1,200 CFM
20"x8" PRD	1,600 CFM	14" PRD-RD	1,800 CFM
20"x10" PRD	2,000 CFM	16" PRD-RD	2,400 CFM
20"x12" PRD	3,000 CFM	*CFM amounts calculated a .3" w.c.	

(See Page 14)

# Universal Zone Control Systems

## MODEL UZC-4 (up to 4 heat & 2 cool)



### SAS Included



## MODEL UZC (Revision 4)

The Ultra-Zone Model UZC is a 4 zone control panel that features auto changeover between heating and cooling modes. The UZC will accept the first call of heating or cooling and turn the system on and close the dampers to the non-calling zones. If another zone calls for the opposite mode, the UZC will hold that call until the first call is satisfied or until a 20 minute timer has passed. Once accomplished, the UZC will go through a time delay to purge the conditioned air out of the system.

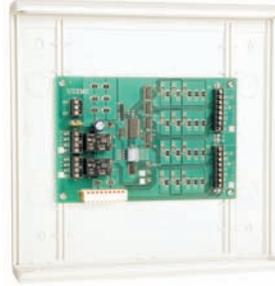
The purge time is the total time the fan will remain on with the last calling dampers remaining open. This can be either 1<sup>1/2</sup> or 3 minutes or turned off. The automatic changeover time is fixed at 4 minutes including the purge time. At the end of this time the system will activate the opposite mode of the HVAC system.

The UZC will control Single Stage 2, 3, & 4 Stage conventional, geothermal or Dual Fuel heat pumps, without the need for dual fuel kits. Also single or multi-stage gas, oil, & hydronic HVAC systems with either single or two stage cooling and constant or variable speed fan systems. Any and all of these systems can be controlled with most any off the shelf thermostats.

The UZC allows for the use of any type of thermostat on any zone with any type of HVAC equipment. This is done with a staging timer built into the UZC. A field adjustable timer between 7 – 42 minutes will energize the staging up when necessary if zones are not satisfying based upon the time set on the timer. This feature allows the installer to use single stage thermostats with multi-stage equipment, a very user friendly feature.

There are (2) two energy saving features that the UZC incorporates that can save homeowners more than 40% on utility bills. The first is our 50% rule. This feature will not allow staging up to occur if less than 50% of the zones are in demand. This will prevent the HVAC system from consuming unneeded energy. The second is using our OAS sensor with the UZC to sense the outside air temperature and also limit the staging up process if the temperature is too mild. The OAS works with an adjustable setting between 7 and 42 degrees, if the temperature is above the set point, again the UZC will prevent the use of unneeded energy consumption.

## MODEL ZXM-2 (Expansion Panel) (maximum 20 zones)



The UZC also features (2) two safety controls built into the panel. The first is its ability to have a “Fire Alarm Interlock”. If the UZC is wired into the fire alarm system and a signal is detected the UZC will shutdown the HVAC system and close all dampers. The second safety feature is “Demand Based Ventilation”. This allows the UZC to wire into a CO<sub>2</sub> monitor and control Fresh Air if needed. If the UZC detects a signal from the Carbon Dioxide monitor the panel will open all dampers, open the Fresh Air damper and turn the HVAC fan on, helping to vent the building.

### Other Industry setting features include:

#### Electronic Bypass Damper Interface

Achieves “Latent Cooling “and “Quiet Mode” start up

#### Adjustable Supply Air Sensor

Prevents over heating or cooling

#### Adjustable Heat Differential Potentiometer

Allows the SAS to be mounted in any location

#### One Zone Feature

Allows one thermostat to control multiple zones for set back

#### Computer Watchdog Circuitry

Prevents lock-ups from power failures and power interruptions.

#### Manual and Automatic Thermal Circuit Breakers

Protects the UZC from wiring shorts

#### Dehumidify or Humidify Interface

Auxiliary contacts to help increase comfort operations

#### Return Air Monitoring

Enhanced HVAC energy savings

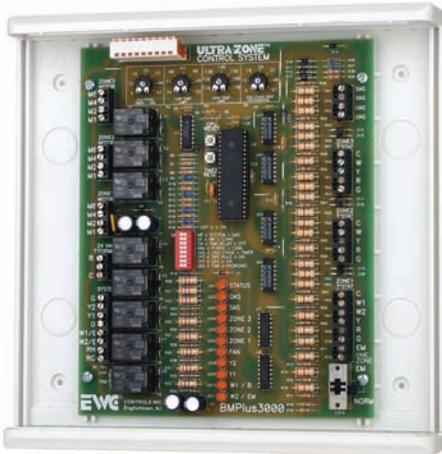
#### Variable Speed Interface

Slows down fan speed if less than 25% of zones are calling

For systems larger than 16 zones, call factory for pricing.

Product	List Price	Product	List Price
UZC-4	\$ 634.00	UZC-14	\$ 1,705.00
UZC-6	828.00	UZC-16	1,955.00
UZC-8	1,012.00	SAS	50.00
UZC-10	1,223.00	OAS	50.00
UZC-12	1,455.00	ZXM-2	258.00

## BMPlus Series (up to 2 heat & 2 cool)



The BMPlus control panel is a single stage, two stage, dual fuel, and heat pump compatible panel controlling up to seven zones. The system features automatic changeover and fan control from any zone with a built in computer “watchdog circuit” to insure proper operation. The BMPlus is supplied with an SAS sensor for high and low temperature limit control that has field adjustable temperature limits.

The control panel is compatible with any 3 or 4 wire thermostat on any zone and allows for single stage thermostats to control heat-pump or multi-stage equipment. The BMPlus is also compatible with any two stage heat pump thermostat which can be used in all zones. Our unique 50% rule (if set) will inhibit second stage if less than half of the total number of zones are calling. The intelligent design of the BMPlus eliminates the need for a dual fuel kit for heat pumps. The panel can control staging based on time or outdoor temperature with the optional OAS sensor.

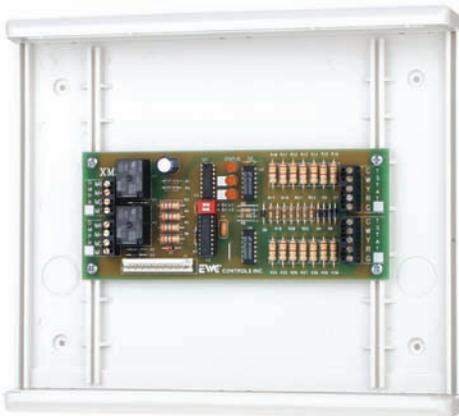
The convenient “One Zone Mode” allows for the entire zoning system to be programmed from one location. This can be controlled by the thermostat or the optional VAC switch. This is great for vacation periods or night set back applications.

### SAS Included



Model	List Price	Model	List Price
BMPlus-3000	\$327.00	XM-2	\$260.00
BMPlus-5000	440.00	SAS	50.00
BMPlus-7000	618.00	OAS	50.00
		VAC	50.00

## XM-2 (Expansion Panel) (maximum 7 zones)



The XM-2 is the expansion panel for the BMPlus series control panel. The XM-2 will allow the original (3) three zone panel to expand (2) two zones at a time. The XM-2 comes with a “plug-n-play” cable that will connect to the main panel.

Model	List Price
XM-2	\$260.00

# Zone Control Systems

## NCM-300

The NCM-300 control panel is compatible with single stage systems, two stage heat systems and heat pump systems. The panel is configured for 2 or 3 zones and non-expandable. This is ideal for residential new construction allowing a very competitive product to be sold to the homebuilder. The NCM-300 features automatic changeover and fan control from any zone with a built in computer “watch-dog circuit” to insure proper operation. The panel is shipped with an SAS sensor for high and low limit protection control. The SAS has adjustable potentiometers for the heating and cooling limits for different geographical locations. The NCM-300 control panel is compatible with any 3 or 4 wire thermostat on any zone and allows for single stage thermostats to control heat pumps or multi-stage systems with an adjustable timer. The NCM-300 is also compatible with two-stage heat pump and dual fuel thermostats.

The opposing system timer insures that no zone will starve for needed conditioned air, this can also be turned off to allow for maximum run times. The “One Zone” allows the occupants to flip a switch (VAC) and put the panel into vacation mode. This mode sets the zoning system based on the program of the zone one thermostat allowing the whole system to be programmed from one location. The LED bank allows for instant recognition and detection of system status for the installer.

The NCM-300 allows for dual transformer systems (ex. hydro-air, oil burners, hot water coils etc.) to wire up without the need for additional relays. We have incorporated an isolation relay on the NCM-300 to allow for easy wiring to these systems.

Model	List Price
NCM-300	\$275.00
VAC	50.00
RES	50.00



### SAS Included

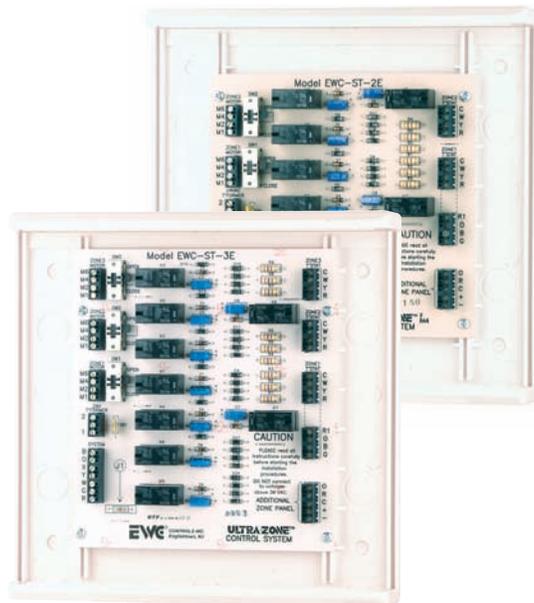


## MODEL ST-2 / ST-3 Rev. E

Model ST series panels are for single stage heating and cooling with manual changeover. Zone 1 is the “master” zone which controls the heating and cooling mode and also the fan operation. The ST-2 is a 2 zone panel and the ST-3 is a 3 zone panel. Zones 2 and 3 will only operate in the same mode that the zone #1 thermostat is in. Each thermostat can turn the system “on” and “off,” but only in the same mode. It is recommended that zones 2 and 3 have no switching subbases for the thermostats. The ST panels can be used with mechanical or digital programmable thermostats that are non-power stealing.

Open-Close switches on the control panels near the damper terminal blocks allow for continuous air circulation. This switch controls the damper position when the heating and air conditioning system is at rest. The ST panels can be wired together to create larger zoning systems up to 5 zones.

Model	List Price
ST-2E	\$190.00
ST-3E	235.00



# Motorized Dampers

## MODEL URD



## MODEL RSD



### PRICING FOR BOTH URD & RSD

Size	List Price	Size	List Price
4 URD	\$193.00	12 URD	213.00
6 URD	195.00	14 URD	245.00
7 URD	195.00	16 URD	284.00
8 URD	199.00	18 URD	342.00
9 URD	201.00	20 URD	385.00
10 URD	204.00		
		18 RSD	555.00
		20 RSD	580.00

## Model URD & RSD Round Dampers

Model URD and RSD are round, single blade dampers with a shutoff seal that gives the damper a 98% closure. The motor for the URD has no moving switches or parts to burn out. The actuator possesses 17 in. lbs. of torque, manual gear release and powered open/powered close operations. The URD features “fail safe” LED’s that will indicate the position of the blade without

the need to cut holes or remove the damper from the ductwork. The positional LED’s will only illuminate when the blade is in the full open or full closed position. The RSD is a spring return motor. The damper is field reversible from power closed/spring open to power open/spring closed. The motor possesses 5” lbs. of torque. The 18” and 20” RSD’s have a motor with 18” lbs. of torque.

### Options:

- S1A End Switch for URD - see page 17 - List \$115.00
- URD-L Round Damper with NO motor - 5/8” round shaft - Deduct \$50 off List Price
- URD-LM24SR-T Modulating Motor - Add \$250 to List Price
- URD-LF24 24 Volt - 35 in LBS - Spring Return - Add \$385 to List Price
- URD-LF120 120 Volt - 35 in LBS - Spring Return - Add \$395 to List Price

## MODEL SID



### The Retrofit Solution

The SID (Slip-In-Damper) is the most user friendly retrofit damper available. The 1.5VA actuator allows up to 20 SID’s on one EWC Controls zone panel with a 40va transformer. With a single cut the SID can be installed in seconds. The optional S1A (see page 17) end switch allows for increased flexibility.

Size	List Price
4"	\$142.00
5"	\$142.00
6"	\$143.00
7"	\$147.00
8"	\$155.00
9"	\$170.00
10"	\$187.00



### URD-SR120 120 Volt Round Spring Return

The URD-SR120 is a round spring return style damper with a 120 Volt motor with end switch. This is used in stand alone applications and CANNOT be used with any of the Ultra-Zone zone panels. The Ultra-Zone zone panels are 24V.

Size	List Price
4"	\$335.00
5"	\$337.00
6"	\$339.00
7"	\$341.00
8"	\$344.00
9"	\$350.00
10"	\$358.00
12"	\$364.00
14"	\$375.00
16"	\$390.00

# Motorized Dampers

## Old Fashion Reliability With NEW State of the Art Technology

- Heavy Duty Frame
- Nylon Bushings for Quieter Operation
- Revolutionary Motor with greater Reliability
- LED's to Show Damper Operation
- Low Leakage
- Simple 3-wire Hook-up
- Easier Ordering
- Motor is always mounted on second dimension specified

### Options

ND-L	5/8" round shaft-no motor	Deduct \$30 off List
ND-MQ	Manual Quadrant-No motor	Deduct \$35 off List
ND-LM24	35 in. lbs. motor 24volt	Add \$225 to List
ND-LM24SR-T	Modulating Motor	Add \$250 to List
ND-MA15S	15 Second Motor	Add \$160 to List
S1A	End Switch	List \$115.00
ND-LF24	24V Spring Return 35" lbs	Add \$385.00
ND-LF120	120V Spring Return 35" lbs	Add \$395.00

To purchase these items separately, add \$100.00

### MODEL ND



### MODEL ND-RSD



### ND SERIES DAMPERS

The ND series of Ultra-Zone dampers was designed with the installer and homeowners in mind. This damper is easy to install and easy to checkout. The LED display allows the installer to visually check the damper operation. With a sturdier frame, the damper installs in the duct much faster and easier and the nylon bushings insure quieter operation. This is a feature that homeowners will never hear about! Quieter operation and a longer life motor equals NO call backs.

The motor for the ND damper is driven by 17 in. lbs. of torque, possesses a manual gear release, 3 wire power open/power closed operation and fail-safe LED's for quick diagnostic checks. The motor is UL listed and NEMA Class 2 certified. The easy access, quick connecting terminal block eliminates the need for wire nuts and allows for trouble free use.

The ND damper has a 97% leak proof rating. Overlapping blades and a strong positive shut-off motor insures accurate control of all zones. The ND dampers combined with an Ultra-Zone zoning system provides the most comfortable and reliable system in the industry.

The ND is available in 8" x 6" thru 30" x 30" in even inch increments. The motor will be mounted on the second dimension when ordered. For example, a 16" x 8" damper will have the motor mounted on the 8" dimension, while an 8" x 16" will have the motor mounted on the 16" dimension. This will alleviate the confusion between side mount and bottom mount dampers.

For added flexibility, ND dampers can also be provided with a spring return style motor. Model ND-RSD. The ND-RSD is driven by 5" lbs. of torque.

*Note: Specify "spring closed" or "spring open" when ordering*

## Duct Board Adapters

The brackets are used to mount ND and ND-RSD style dampers to fiberglass duct boards. The brackets are 1" thick. Add the number "5" to the part number for 1.5" thick duct board. (Ex. DBA-10-5)



Model	List Price	Model	List Price
DBA-6"	\$24.00	DBA-16"	\$48.00
DBA-8"	26.00	DBA-18"	50.00
DBA-10"	30.00	DBA-20"	52.00
DBA-12"	36.00	DBA-22"	54.00
DBA-14"	47.00	DBA-24"	56.00

# Motorized Dampers

## Pricing for both ND & ND-RSD

### Side Mounts

ND 8x6	\$252.00	ND 24x6	\$288.00
ND 8x8	255.00	ND 24x8	292.00
		ND 24x10	317.00
ND 10x6	254.00	ND 24x12	326.00
ND 10x8	258.00	ND 24x14	342.00
ND 10x10	268.00	ND 24x16	359.00
		ND 24x18	372.00
ND 12x6	260.00	ND 24x20	388.00
ND 12x8	264.00	ND 24x22	408.00
ND 12x10	279.00	ND 24x24	433.00
ND 12x12	282.00		
		ND 26x6	301.00
ND 14x6	266.00	ND 26x8	305.00
ND 14x8	268.00	ND 26x10	328.00
ND 14x10	283.00	ND 26x12	340.00
ND 14x12	293.00	ND 26x14	360.00
ND 14x14	297.00	ND 26x16	377.00
		ND 26x18	389.00
ND 16x6	270.00	ND 26x20	405.00
ND 16x8	272.00	ND 26x22	419.00
ND 16x10	289.00	ND 26x24	437.00
ND 16x12	296.00	ND 26x26	453.00
ND 16x14	304.00		
ND 16x16	314.00	ND 28x6	305.00
		ND 28x8	311.00
ND 18x6	272.00	ND 28x10	336.00
ND 18x8	275.00	ND 28x12	347.00
ND 18x10	294.00	ND 28x14	367.00
ND 18x12	304.00	ND 28x16	384.00
ND 18x14	307.00	ND 28x18	398.00
ND 18x16	318.00	ND 28x20	413.00
ND 18x18	321.00	ND 28x22	428.00
		ND 28x24	444.00
ND 20x6	279.00	ND 28x26	458.00
ND 20x8	281.00	ND 28x28	472.00
ND 20x10	304.00		
ND 20x12	308.00	ND 30x6	310.00
ND 20x14	312.00	ND 30x8	317.00
ND 20x16	328.00	ND 30x10	346.00
ND 20x18	340.00	ND 30x12	366.00
ND 20x20	353.00	ND 30x14	389.00
		ND 30x16	411.00
ND 22x6	281.00	ND 30x18	434.00
ND 22x8	285.00	ND 30x20	445.00
ND 22x10	308.00	ND 30x22	467.00
ND 22x12	318.00	ND 30x24	482.00
ND 22x14	324.00	ND 30x26	510.00
ND 22x16	343.00	ND 30x28	552.00
ND 22x18	365.00	ND 30x30	579.00
ND 22x20	385.00	Note: Motor is always mounted on second dimension specified.	
ND 22x22	408.00		

### Bottom Mount

ND 8x10	\$258.00
ND 8x12	264.00
ND 8x14	268.00
ND 8x16	272.00
ND 8x18	275.00
ND 8x20	281.00
ND 8x22	285.00
ND 8x24	292.00
ND 8x26	305.00
ND 8x28	311.00
ND 8x30	317.00
ND 10x12	279.00
ND 10x14	283.00
ND 10x16	289.00
ND 10x18	294.00
ND 10x20	304.00
ND 10x22	308.00
ND 10x24	317.00
ND 10x26	328.00
ND 10x28	336.00
ND 10x30	346.00
ND 12x14	293.00
ND 12x16	296.00
ND 12x18	304.00
ND 12x20	308.00
ND 12x22	318.00
ND 12x24	326.00
ND 12x26	340.00
ND 12x28	347.00
ND 12x30	366.00
ND 14x16	304.00
ND 14x18	307.00
ND 14x20	312.00
ND 14x22	324.00
ND 14x24	342.00
ND 14x26	360.00
ND 14x28	367.00
ND 14x30	389.00
ND 16x18	318.00
ND 16x20	328.00
ND 16x22	343.00
ND 16x24	359.00
ND 16x26	377.00
ND 16x28	384.00
ND 16x30	411.00
ND 18x20	340.00
ND 18x22	365.00
ND 18x24	372.00
ND 18x26	389.00
ND 20x22	385.00
ND 20x24	388.00

## Pricing for both ND & ND-RSD

# Static Pressure Control

## MODEL EBD



## MODEL PS-4



The EBD style by-pass are self-contained units that give you the static control mounted to the damper. It is an “all-in-one” design that makes the installation process much easier than most electronic by-pass dampers. The static pressure can be adjusted in the field between 0.1" to 4" of pressure. This is done by the turn of a set-screw. Requires 24VAC to operate. Tubing and pitot tube are included.

Size	List Price
10"	\$459.00
12"	499.00
14"	515.00
16"	710.00
18"	787.00
20"	822.00

Size	List Price
12" X 8"	\$491.00
12" X 10"	504.00
12" X 12"	507.00
20" X 8"	507.00
20" X 10"	530.00
20" X 12"	533.00

To order Pressure Switch **ONLY**

**MODEL PS-4 List Price \$250.00**

NOTE: We can make any size EBD. Use with ND or URD style damper. (Page 11 & 13)

## MODEL PRD



Model PRD pressure regulating damper is a single blade, steel, barometric damper with a counter balanced weighted arm. The PRD provides an economical solution for bypassing excess air when zone dampers close.

Damper adjustment is done by adjusting the supplied weights and by offsetting the arm. The PRD is reversible for Airflow Direction.

Other sizes available upon request.  
Additional Arms and Weights

**MODEL# PRD-Weight and Arm (List Price \$20.00)**  
**Box of 10 Model # PRD-Weights -10 (List Price \$99.00)**

Size	List Price	CFM
12X8" PRD	\$135.00	1000
12X10" PRD	140.00	1200
12X12" PRD	151.00	1400
20X8" PRD	166.00	1600
20X10" PRD	171.00	2000
20X12" PRD	177.00	3000

CFM Calculated @ .3" W.C.

## MODEL PRD-RD



Model PRD-RD pressure regulating damper is a single blade, round variation of a barometric relief damper. This is the simplest, most economical way of bypassing excess static pressure in multi-zone applications.

Resistance is controlled by offsetting the arm and adjusting the weights. The arm can be inserted into either side of the damper for added versatility.

Other sizes available upon request.  
Additional Arms and Weights

**MODEL# PRD-Weight and Arm (List Price \$20.00)**  
**Box of 10 Model # PRD-Weights -10 (List Price \$99.00)**

Size	List Price	CFM
8" PRD-RD	\$130.00	400
10" PRD-RD	136.00	750
12" PRD-RD	141.00	1200
14" PRD-RD	151.00	1800
16" PRD-RD	161.00	2400

CFM Calculated @ .3" W.C.

## Internet Enabled Zone Control Thermostats



**IZT-250**  
List \$1,530

Remotely Control and Monitor the temperature and humidity in any Home, Vacation Home, Office Building, Warehouse or in every zone of an Ultra-Zone system. Compatible with 1H / 1C or up to 3 Stage Heat and 2 Stage Cool systems. 24vac hard wired, 366 day programming. No software to load. Wired Ethernet and Secure Web Server technology with reliable TCP/IP protocol. E-mail or Text messaging Alarm Reporting service for High and Low temperature and High or low humidity. Alerts the Contractor and the Homeowner. Trigger events can activate the Emergency Heating or De-Humidification systems if levels are exceeded. Network, Schedule, Monitor, Diagnose, and Control all of your thermostats from a Single Web Site with Secure Password Authentication.



**IZT-100**  
List \$1,025

Remotely Control and Monitor the temperature in any Home, Vacation Home, Office Building, Warehouse or in every zone of an Ultra-Zone system. Compatible with 1H / 1C or up to 2 Stage Heat and 1 Stage Cool systems. 24vac hard wired, 366 day programming. No software to load. Wired Ethernet and Secure Web Server technology with reliable TCP/IP protocol. E-mail or Text messaging Alarm Reporting service for High and Low temperature. Alerts the Contractor and the Homeowner. Network, Schedule, Monitor, Diagnose, and Control all of your thermostats from a Single Web Site with Secure Password Authentication.

### EWT-3102



The Large 5" touchscreen thermostat is compatible with Single Stage and Two Stage heating and cooling systems, as well as Heat Pumps and Three Stage heating and Two Stage cooling systems. The EWT-3102 features 7 Day or 5 + 2 day programming. The Auto Changeover, adjustable differential, Energy Star rating and energy efficient recovery are just a few features that the EWT-3102 includes. **List \$289.00**

### EWT-3707



Digital programmable thermostat for single stage systems and two stage heat pump systems. 7 Day or 5 + 2 day programming. 24V or Battery powered. Auto or manual changeover. **List \$130.00**

### EWT-3611



Digital Non-programmable thermostat for single stage systems. 24V or Battery. **List \$99.00**

### EWT-3900



The Wireless thermostat with 7 day or 5 + 2 day programming allows for easy retrofit applications for zoning or non-zoning installations. The thermostat includes the wireless receiver and a wall mount bracket that allows for easy "pop-on" and "pop-off" for hand held programming. The EWT-3900 thermostat is compatible with Single Stage and Two Stage heating and cooling systems, as well as Heat Pumps and Three Stage heating and Two Stage cooling systems. The receiver will be 24V powered. **List \$ 475.00**

# Fresh Air Intake & Economizer System



## MODEL HK2000

Finally, a control that gives meaning to the letter “V” in HVAC, the cure for “sick building syndrome.” Helps meet local building codes and “ASHRAE” ventilation standards.

The HK2000 Fresh Air and Economizer panel provides intelligent and economical control of residential and commercial heating and cooling systems. In the **Fresh Air mode**, the HK2000 has the flexibility to bring in as much, or as little Fresh Air as needed. The cycle timer is adjustable from 0 (off) to 12 cycles (continuous) per hour. When the cycle timer is set to 4 cycles per hour, representing 20 minutes of Fresh Air, the HK2000 will activate the Fresh Air mode for 5 minutes every 1/4 hour (or every 15 minutes).

This feature is designed to minimize the load that could build up on the HVAC system. Other added flexibility of the HK2000 is its ability to control exhaust air and return air as well as fresh air intake. This built in feature prevents over pressurization in homes and buildings.

The **Economizer mode** of the HK2000 allows for the use of outside air to satisfy the need of indoor cooling. This form of “free cooling” is monitored and controlled using several methods.

**Dry bulb method**, also known as, outdoor temperature method will sense the outside air temperature and determine if that air alone could satisfy the cooling demand. The determining temperature range for this method is field adjustable between 42° F and 78° F. The outdoor air sensor (OAS) is included with each panel for this function.

If the outside air is too warm, the HK2000 will start the air conditioning unit. If the dry bulb mode uses outside air, the HK2000 will also monitor its success. If the cooling is not satisfied within 15 minutes using outside air, the HK2000 will shut down and start the air conditioning unit.

During **Enthalpy mode** an optional enthalpy control (EC) can be used to sense the outside air for appropriate conditions. The EC will either satisfy the cooling with outside air or turn on the air conditioning unit using its own settings.

The most economical advantage of the HK2000 is the **Mechanical Cooling Assistance mode**. This will allow the HK2000 to monitor the return air temperature with the use of an optional return air sensor (same as OAS) and compare it to the outdoor air temperature. If conditions allow, the HK2000 will bring in outside air and mix it with return air and use this as cooling. This again, reduces the load on the HVAC unit.

Model	List
HK2000	\$230.00
OAS	50.00

## MODEL EC Enthalpy Control

Enthalpy control provides the means to sense outside air temperature and humidity. When these conditions are acceptable fresh air can be used instead of cooling  
List \$320.00



## S1A



Line Voltage rated End-Switch assembly for all new ND and URD style dampers. Easily attaches over the top of the motor. Can operate blower motor, combustion air, hydronic zone valve or circulator, among other applications  
**List \$115.00**

## R4



A compact version of the RP4 Use for custom control applications.  
**List \$65.00**

## CPLS



Monitors cooling coil temperature and protects against coil freeze-up. Stops compressor below 37° and restarts above 47°. (Not adjustable) Mounts on a 3/4" suction line.  
**List \$35.00**

## BT-DP



Double pole bulb thermostat. 0° to 100° range.  
**List \$315.00**

## BT-SP



Single pole bulb thermostat 15° to 90° range.  
**List \$170.00**

## CTC



Monitors cooling coil temperature and protects against cool freeze-up. Stops compressor below 36° and restarts above 46°. Adjustable.  
**List \$150.00**

## F1

A 2 AG, 3 amp Slow Blow fuse for replacement on ST and STHP series ULTRA-ZONE control panels.  
 Package contains 5 fuses.  
**List \$15.00**

## RES



Remote Emergency illuminated switch for use on Heat Pump systems. Used in place of an emergency switch located on the thermostat. **List \$50.00**

## T40-VA



Plate mounted 24V 40VA transformer for use with ULTRA-ZONE dampers and control systems. **List \$29.00**

## RAC



A SPDT illuminated switch used to replace a thermostat for manual damper control. Face plate marked "AC Damper."  
**List \$50.00**

## FAC



A SPDT illuminated switch used to replace a thermostat for manual damper control. Face plate marked "Fresh Air Damper."  
**List \$50.00**

## VAC



One zone illuminated switch provides convenient set back of all zones from one location. Used as an occupied / unoccupied switch. **List \$50.00**

## RR



Replacement relay for older style ULTRA-ZONE panels.  
**List \$45.00**

# Parts & Accessories

## MAN / MA-5P

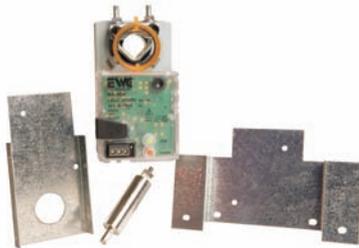


Two Position, power-open, power-closed actuator. Use with standard opposed blade dampers. (MAN).

5 Position, power-open, power-closed actuator. Use with standard opposed blade dampers. Interchangeable with MAN actuators. (MA-5P)

**List \$140.00**

## MRK



Motor replacement kit used for all styles of ND - URD and RDN dampers. Kit comes complete with all necessary brackets and screws.

**List \$150.00**

## MA-ESR



Spring return actuator used on ND-ESR and URD-ESR dampers.

**List \$125.00**

## MA-SR



24V and 120V available.

Two wire spring return actuator. Used on SMD-SR, RD-SR & URD-SR dampers.

**List \$210.00**

## R1

Single-pole, double-throw, 24volt relay coil.

**List \$28.00**

## MA-SMDLED



Two Position, power-open, power-closed actuator. Used on SMDL & BMDL dampers. **List \$110.00**

## HCD



Salesman's display of a complete 2 zone system in a neat, easy-to-carry case.

**List \$810.00**

## MCS-DXB



Remote selector switch for use with ST series ULTRA-ZONE Control panels. This switch replaces the zone 1 thermostat subbase if separate remote system control is desired. 4 wires required.

**List \$84.00**

## OTHER ACCESSORIES

### EWT-P

Modulating Thermostat (0 – 10 VDC). May control up to 10 dampers.

**List \$300.00**

### MP

Manual Positioning for modulating dampers. May control up to 10 dampers.

**List \$165.00**

### PC-1, 2, 4

These are 5-Position control switches controlling 5-Position damper motors.

**List \$165.00**

### EWT-RS

Non mercury single stage thermostat.

**List \$52.00**

### TSB-RS

3 wire damper only subbase for EWT-RS.

**List \$45.00**

### TSB-MR

6 wire subbase for control panel operations with EWT-RS.

**List \$49.00**

# Residential Steam Humidifier



Included

- Computer Watchdog Circuit
- Automatic Drain/Flush system
- Highest efficiency rating
- Automatic maintenance mode
- Replaceable Sacrificial Anode
- 100% guaranteed no summer maintenance
- Humidifies without a call for heat
- LED's for system readout
- Most effective cure for dry homes
- Listed and Approved by UL
- Interlocking wiring for fan control
- Compatible with all forced air systems
- Optional - Current sensing relay that provides fan proving for safety
- Optional Water Filter

## Limited Warranty

EWC Controls warrants its products to be free of any defect in material and workmanship for a period of five years from date of installation. (Steam Humidifier 1 year from the date of installation) All returns are subject to a restocking charge and MUST have prior authorization from EWC Controls to be returned. SPECIAL ORDER AND NON-STANDARD ITEMS ARE NOT RETURNABLE.

EWC Controls will inspect all returned items. If found to be defective in material or workmanship, the item will be replaced or credited per customer request. All items must be sent freight pre-paid.

Any item found not to be defective or out of warranty will be returned freight-collect.

EWC Controls will not be liable for any special, indirect, incidental, or consequential damages, including but not limited to, labor charges of any character in connection with the sale, resale or use of the item.

EWC Controls reserves the right to make changes without notice in design, application, and price in order to effect product improvement.



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