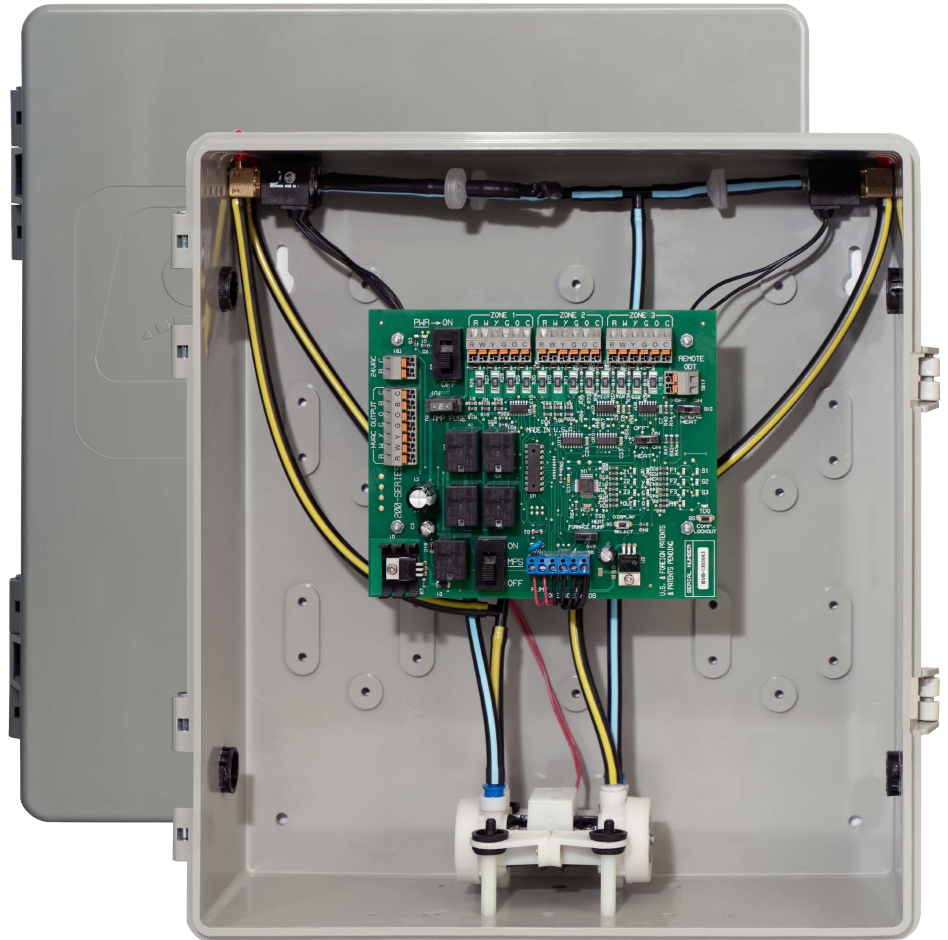


# Installation & Operation Instructions

**Panel: 200 MPS®**



 **Arzel<sup>®</sup> Zoning**  
TECHNOLOGY

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## Thank you for choosing Arzel®

*Thank you for choosing the Arzel® MPS® zoning system for your comfort and energy efficiency needs.*

*Please be assured that we are committed to unparalleled product performance and complete customer satisfaction in addition to the highest in product quality.*

 **Arzel® Zoning**  
TECHNOLOGY

# Operating your new zoning system

**Your zoning system is simple to operate and requires no maintenance.**

The system will allow you to increase your comfort by directing conditioned air to separate areas (zones) based upon each zone's thermostat setting. It provides the opportunity to conserve energy by adjusting the thermostat setting in unoccupied areas to energy saving levels.

To operate the system, just set or program each zone's thermostat to your desired comfort and/or set-back settings. When there is a call for heating or cooling from any zone, the appropriate heating or cooling equipment will be turned on. The dampers in zones not requiring heating or cooling will close and the conditioned air will be directed to the calling zone(s) until the thermostat is satisfied.

When there is not an active call for heating or cooling, you may circulate air in individual zones by selecting the "Fan ON" function on each individual thermostat. The dampers in zones with the fan set to "Auto" will close.

Please feel free to learn more about the installation and operation of the Arzel® MPS® Series by reviewing this entire manual. Consult your installing contractor with any questions regarding system operation. If questions are still unresolved, you may call Arzel®'s Technical support for homeowners from 8 AM - 5 PM EST from Monday-Friday. Please have your system serial number available when you call. Your installing contractor can reach Arzel® Technical support Monday-Friday 8 AM - 9 PM EST. The Arzel® Technical support phone number is 1-800-611-8312.



# INSTALLATION PRECAUTIONS

Read these instructions carefully.  
Failure to follow them could damage the Arzel® Zoning System  
and/or cause a hazardous condition.

## WARNING

1. **Disconnect the power supply** to the HVAC system and the zoning system before making any wiring connections to prevent the danger of electrical shock or equipment damage.
2. Be sure the HVAC manufacturer's operating specifications are compatible with the Arzel® zoning system.
3. All wiring must comply with applicable electrical codes, ordinances and regulations.
4. Use properly grounded tools, safety glasses and gloves when drilling or cutting sheet-metal ducts, fiberglass or any hard objects.

## CAUTION

1. The Arzel® system is designed for indoor use only.
2. You must touch a grounded metal object before handling the control panel to avoid potential loss of internal programs due to electrostatic discharge.
3. Install in ambient temperature between 40° F and 140° F in a non-condensing area.
4. Check all system operations after installation is complete.
5. The damper blade gently wipes the inside of the ductwork. Insert a sleeve inside any fiberglass, or abraidable ductwork, so the blade does not abrade the materials into the air.
6. Leave these instructions with the installed system for future use.
7. There are both AC and DC terminals on the circuit board. Do not intermingle wires.

### GENERAL SYSTEM OPERATION:

When all thermostats are satisfied, the air pump, the HVAC equipment, and the solenoid air valves are de-energized. Dampers will remain in whatever position they were in when the last thermostat call was finished. Leaving the dampers open in the last zone served allows the HVAC system to utilize the residual energy in the system at the end of both the heating and cooling cycles.

The Manual Pump Switch (MPS®) is provided to run the pump continuously. Turning the MPS® switch to ON manually makes the pump relay and the pump starts, driving all dampers open. This creates a failsafe. If the board fails the dampers can be easily opened and the system run from one thermostat.

# Product Overview

## THERMOSTATS

The MPS® Series Arzel® Zone Control is compatible with any standard 24VAC thermostat: Wireless, Auto/Manual changeover, Programmable/Non-programmable, Heat/Cool or Fan/Auto/On sub-base switching. If the thermostat has an adjustable heating anticipator (mechanical thermostats), set it to the shortest or lowest setting.

**Heat pump thermostats are required for heat pump operation. Set up the thermostat to call Y, G in heating. Y,G,O in cooling.** Regardless of equipment type, if your equipment energizes the reversing valve in Heating mode utilize the "B" terminal on the HVAC outputs. See page 6 for wiring diagram.

## LEAVING AIR TEMPERATURE CONTROLS

The MPS® Series does not monitor the temperature of the air in the ductwork. If positive control is desired, additional temperature controls must be installed.

# Installation & Setup Instructions

## 1. Install Dampers/Run Tubing

Dampers install directly into new or existing ductwork. Orient the tube connection port so it is pointing upstream (toward the equipment). Install one main tubing run for each zone. Use connection "T's" for multiple dampers in a zone. Arzel® recommends using a different color tube for each zone. *Note: Dampers should not be concealed behind a permanent barrier such as drywall without an access panel.*

## 2. Mount Control Panel

The control panel must be mounted vertically on an exterior wall to reduce noise. The wall must also be located in a non-condensing area where temperatures will not normally exceed 140° F. **DO NOT MOUNT PANEL ON DUCTWORK, HVAC EQUIPMENT, STAIRWELL, or BEDROOM WALLS.** The best method is to attach a piece of ¾ " plywood to an exterior stud wall or foundation. Hold the panel level on the wall and mark the positions of the upper mounting holes. Drive two screws into the wall leaving the heads at least ½ " out. Set the panel over the screws. Drive two screws into the lower mounting holes. Tighten the upper screws. **Note: Prior to making electrical connections, touch a mechanical ground to discharge static electricity.**

## 3. Connect Thermostats

Install a thermostat for each zone observing the terminal designations. Use 18 gauge, multi-conductor, solid thermostat wire to connect the thermostats to the control panel. When using a heat pump thermostat "O" must be set to energize for cooling calls. Document the location of each thermostat connected to each zone on the "Zone Layout" label on the side of the panel.

## 4. Connect Equipment

Use 18 gauge, multi-conductor, solid thermostat wire to connect the HVAC outputs located along the top of the zone control panel to the HVAC equipment. The "C" terminal are for connection between the furnace/air handler transformer and the common circuit of the heat pump/air conditioner controls.

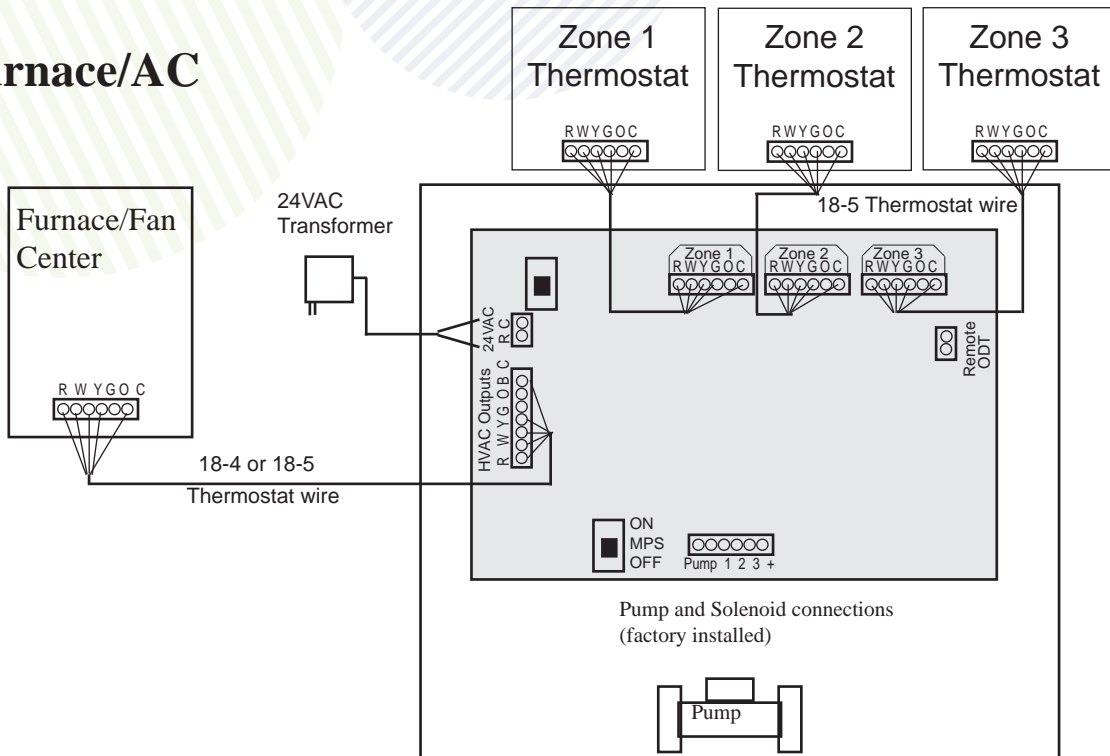
## 5. Connect Transformer

Use 18 gauge, 2-conductor solid wire to connect the R and C power input terminals to the mounting screws on the 40VAC self-resetting, plug-in transformer supplied with the Arzel® Zoning System. Plug in the transformer to any standard 120VAC receptacle. **Note: The provided transformer has an auto-resetting internal overload to protect against low voltage shorts. Additional surge protection may be required. The Use of transformers not approved by Arzel® may void warranty coverage.**

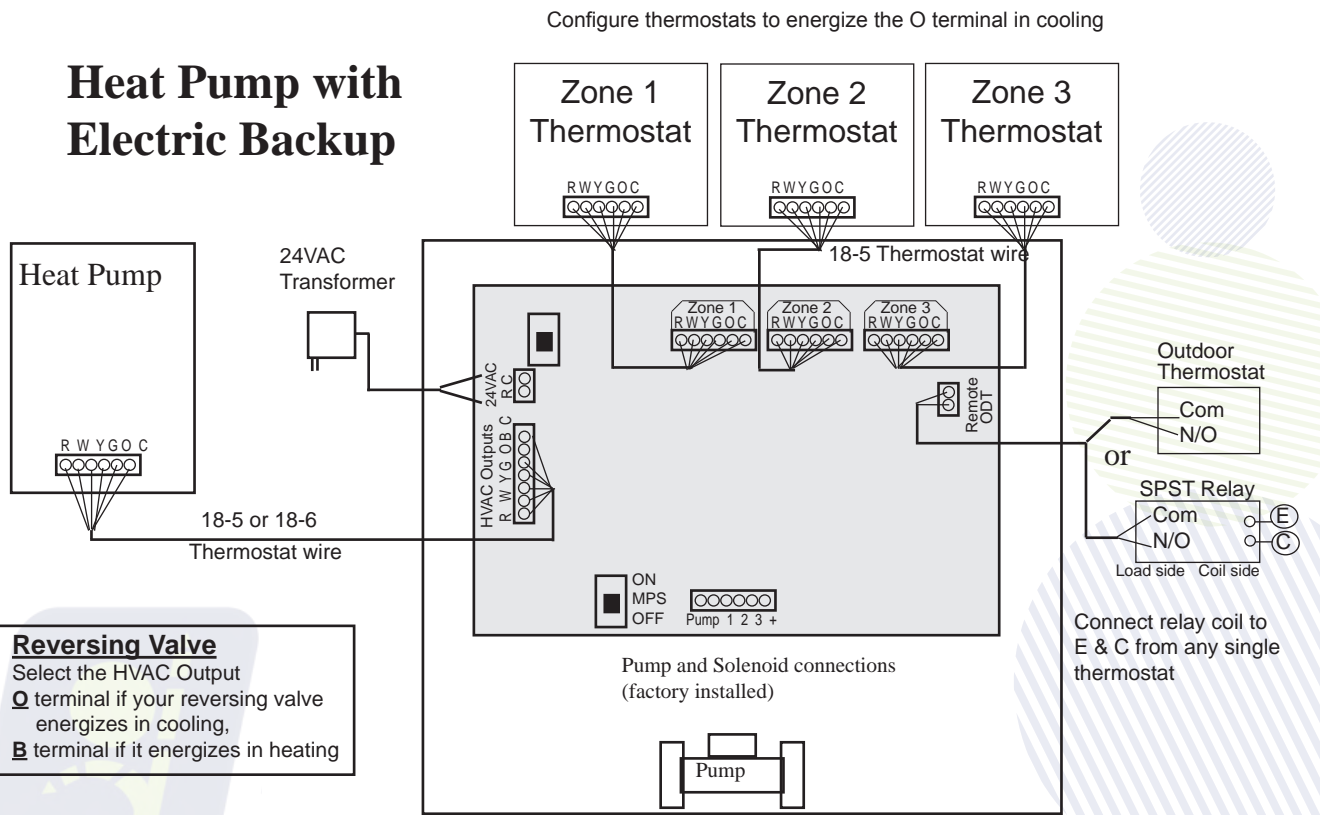
## 6. Turn on Panel

# Wiring Diagrams

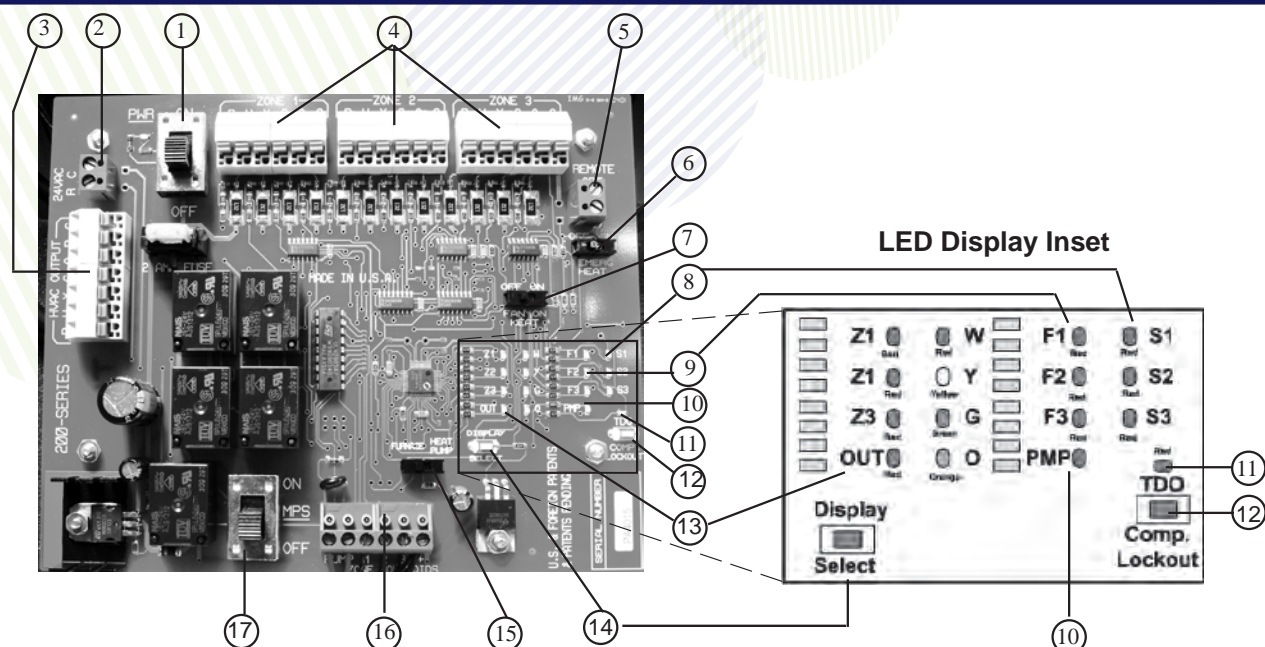
## Furnace/AC



## Heat Pump with Electric Backup



# Board Layout



#	Name	Description
1	PWR On/Off w/LED	The Arzel® System is powered by a 40VA 24VAC transformer (provided). This switch and the HVAC system equipment power switch must always be in the “OFF” position when connecting wires to any terminals
2	24VAC Terminals	The Arzel® 40VA transformer (provided) must be connected to these two terminals.
3	HVAC Output Terminals	<p>Output to the HVAC equipment is controlled by a set of Dry-Contact Relays. The HVAC “R” signal is turned around and sent out to start the appropriate equipment when called by the Zone Control. The HVAC Output circuit is therefore completely isolated from the Zone Control and thermostat power supply.</p> <p>R. Connect hot or + side of HVAC equipment transformer (24 VAC) to this terminal.</p> <p>W. Connect to W1 of furnace. (Aux. heat terminal if heat pump is installed.)</p> <p>Y. Connect to compressor contactor.</p> <p>G. Connect to equipment fan relay.</p> <p>O/ B. Connect either “O” or “B” to heat pump reversing valve, as required by heat pump manufacturer. Use the “O” signal if the unit reverses in the cooling cycle; the “B” if it reverses in the heating cycle.</p> <p>C. Connect common side of HVAC equipment transformer (24 VAC) to this terminal.</p>
4	Thermostat Terminals	Connect thermostat wires (R,W,Y,G,O, and C) as required for your application. Note which thermostats are connected to which zones. (24VAC)
5	ODT Terminals	Emergency Heat Changeover terminals (2.9-3.3VDC) “Remote ODT” are used with an outdoor thermostat to run the emergency heat for dual fuel applications. Do not connect “W” from the zone thermostats to the Arzel® MPS® board if using the MPS® in a dual fuel application. Set thermostats as “Heat Pump without Aux” so that only Y-G are energized on a call for heating.

6	Emer. HT. Switch	Emergency Heat Changeover switch, is used to manually bypass the heat pump and energize the auxiliary heat on a call for service (heat pump application only.)
7	Fan-on-Heat Switch	This switch in the "ON" position will provide automatic fan operation on a call for heating, for electric furnaces, hot water coils, steam coils, etc.
8	S1,S2,S3 Solenoid LEDs	These LEDs indicate which zones are being served and are opening their dampers. [S1,S2,S3(Red)]
9	Fault Code LEDs F1,F2,F3	The 3 Fault Code LEDs illuminate when a thermostat sends an illegal call. A call is illegal if it is improper for the type of HVAC equipment installed. LED will stay lit until the power switch is cycled. <i>F1 = illegal call on zone 1.</i> <i>F2 = illegal call on zone 2.</i> <i>F3 = illegal call on zone 3.</i> Illegal calls are ignored. The system will continue to operate normally, serving any legal calls. Illegal calls may indicate a thermostat or wiring fault in the affected zone.
10	Pump LED	LED [PMP (Red)] light is ON anytime the pump is running.
11	Compressor Lock-out LED	Any time the zoning system turns the compressor off, it holds it off for four(4) minutes. This prevents short cycling the compressor.
12	TDO Time Delay Override	This momentary contact, Time Delay Override switch (TDO), is provided on the PC board to speed the checkout of the zoning system. Before using this TDO switch, you must disconnect the HVAC "R" wire in order to avoid short cycling the equipment. AComp. Lockout LED light will indicate 4 minute compressor lockout condition. [Comp Lockout(Red)]
13	System Status LEDs	The Display Switch controls what information is displayed on the Service LEDs. By default the LEDs indicate the HVAC Output Signal. It will illuminate the "Out" LED and the appropriate service LEDs to indicate the call to the equipment.
14	Display Button Function	Push the button once, and the system illuminates the Zone 1 (Z1) LED and shows what the Zone 1 Thermostat is calling for. Push it again and The Zone 2 (Z2) LED illuminates and the Display LEDs show what Zone 2 is calling for. Push the button a third time and Zone 3 is displayed. Pushing it a fourth time will return it to the Output display.  The system will revert to displaying the Output signal anytime the button is idle for 1 minute.
15	Furnace/Heat Pump Switch	Switch sets the operational mode for the zoning system. Set the switch for the type of equipment that the zoning system is controlling.
16	Solenoid Terminals and Pump Terminals	<u>Factory connection for the Zone Solenoids (24VDC)</u> . Solenoids are energized to provide pressure to close the dampers and de-energized to provide vacuum to open the dampers. <u>Factory connections for the pressure/vacuum pump.(24VAC)</u> The pump operates only when a thermostat calls for a Heat/Cool or Fan operation or when the MPS® switch is in the ON position.
17	MPS Switch	MPS® switch starts pump and opens all zone dampers when Power Switch is OFF.

# System Commissioning

## **FAN CHECK-OUT**

1. Set all thermostats to the OFF position and all fan switches to AUTO.
2. Turn the HVAC system and the Arzel® system PWR switches to ON. The LED light next to the switch will illuminate.
3. Turn the Zone 1 thermostat fan switch ON. The S1 indicator, the Fan output (G) and Pump LED lights will illuminate. The fan in the HVAC system will turn on. The pressure and vacuum pump will position all the dampers. Check the air flow at all register outlets to determine that only Zone 1 dampers are open and all other dampers are closed.
4. Follow the above procedure for all other zones

## **HEATING & COOLING CHECK-OUT**

1. Set all thermostats to the OFF position and all fan switches to AUTO before starting heating system check out.
2. Set Zone 1 thermostat to the HEAT position and turn thermostat up so that the thermostat is calling for heat. The S1 indicator, the W output, and the pump LED lights will illuminate. The pressure/vacuum pump will position all the dampers. Check to see that the heating circuit is energized. If heat pump is installed, check operation of Emergency Back-up heating. Turn the thermostat down until the thermostat is satisfied. The LED lights will go out and the pump will stop. Dampers will remain open in the last zone that called. For heat pump, LED indication will be Y & G.
3. Set thermostat for Zone 1 to the COOL position. Turn thermostat down so that the thermostat is calling for cooling. The S1 indicator, the Y and G output and the pump LED will illuminate. The pressure/vacuum pump will position all the dampers. Check to see that the compressor contactor is energized. For heat pump, LED indication will be Y, G & O.
4. Place Zone 1 thermostat in the OFF position.
5. Follow the above procedure for all other zones.



# EzySlide® Damper Install

A visual aid to installing both the round and rectangular EzySlide® dampers.

## 1. Apply the Template

Apply template with Air Flow Arrow pointed towards register.



## 2. Cut out the Triangle

Drill a 3/4" hole at each of the three corners and connect the holes with your SNIPS.



## 3. Insert the Damper

With the damper being held in the "Closed" position, insert with the blade at the wide end of the triangle.



## 4. Twist into Position

Once the blade is inserted, rotate the damper 90 degrees with the tubing port facing the main duct.



# EzySlide® Damper Install cont.

## 5. Fasten with Zip Screws

Secure damper at two opposing corners. Add the two other screws. Tighten all four screws to just seal gasket.



## 6. Attach the Air Line

Cut a 3/4" section out of the "Homerun Tube" for that zone and insert a tee to connect to damper.



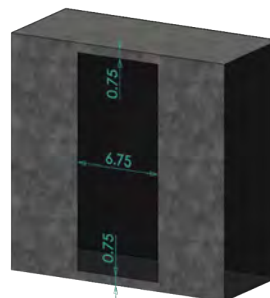
## 7. Finished!

If the tubing looks neat and well organized, the workmanship appears worthy of the investment.



# Rectangular Damper Install

Angle Damper Blade from corner to corner, slide into opening, align it with the duct and screw it in.



# Warranty Information + Procedure

## Warranty Information

Limited Lifetime Warranty on Panel & Dampers if warranty information is submitted to Arzel® Zoning Technology, Inc. for Limited Lifetime Warranty Coverage within 90 days of installation.

Limited Lifetime Warranty Information can be found at  
**[www.arzelzoning.com/warranty](http://www.arzelzoning.com/warranty)**

**The Panel serial number is required when entering warranty information. See below for possible locations.**



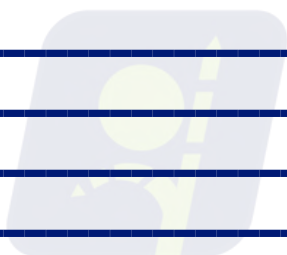
## Warranty Procedure

To receive an RMA, technicians must call while on site (no call no warranty).

Warranties returned to distributors without prior authorization may be denied or subject to 20% processing fee.

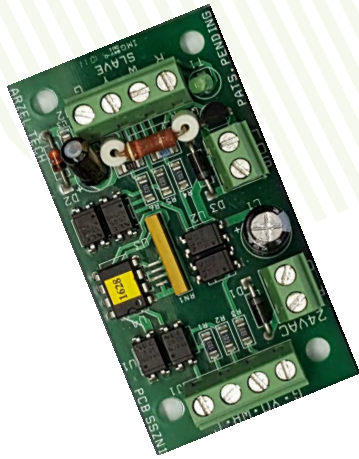
1. Call 800-611-8312 while on the jobsite to diagnose failed parts and continue the warranty process
2. Any diagnosis of failed parts must be verified by Arzel® Technical Support to receive an RMA (Return Material Authorization)
3. All warranty claims must include the serial number of the panel (see image above)
4. Arzel® will ship warranty parts directly to licensed contractors via UPS Ground  
\*Next day air available at additional cost
5. Arzel® Technical Support is available 7 days a week from 8am - 9pm EST

## Notes

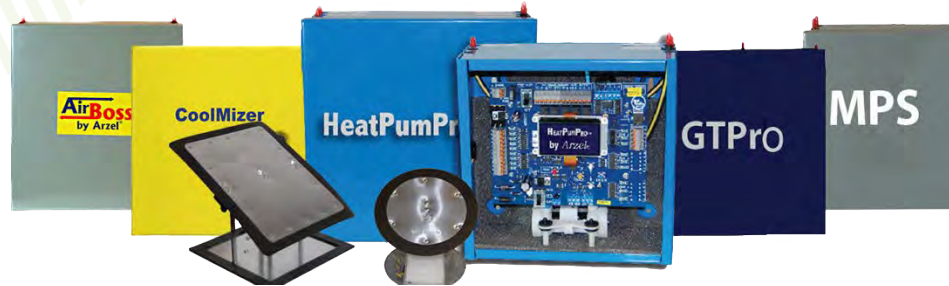
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# Did you know?

WE CAN ADD FRESH AIR CONTROL (FACT) TO ANY OF OUR ZONING PANELS!



The Arzel® FACT System brings in fresh air anytime you want and lets you decide how much fresh air to bring in and under what conditions.



Contact us & ask us how! Or go to  
**[www.arzelzoning.com/services/training/webinars](http://www.arzelzoning.com/services/training/webinars)**  
to schedule your individual Webinar on the Arzel® FACT System!

## Online Resources



All Marketing and Technical literature, installation, and troubleshooting videos, Tech guides, charts, and manuals, as well as recordings of our webinars, can be viewed online in our contractor portal.

Sign up on our website today at  
**[www.arzelzoning.com/services/contractor-signup](http://www.arzelzoning.com/services/contractor-signup)**

**SCAN WITHIN 90 DAYS  
OF INSTALLATION FOR  
WARRANTY INFORMATION**

