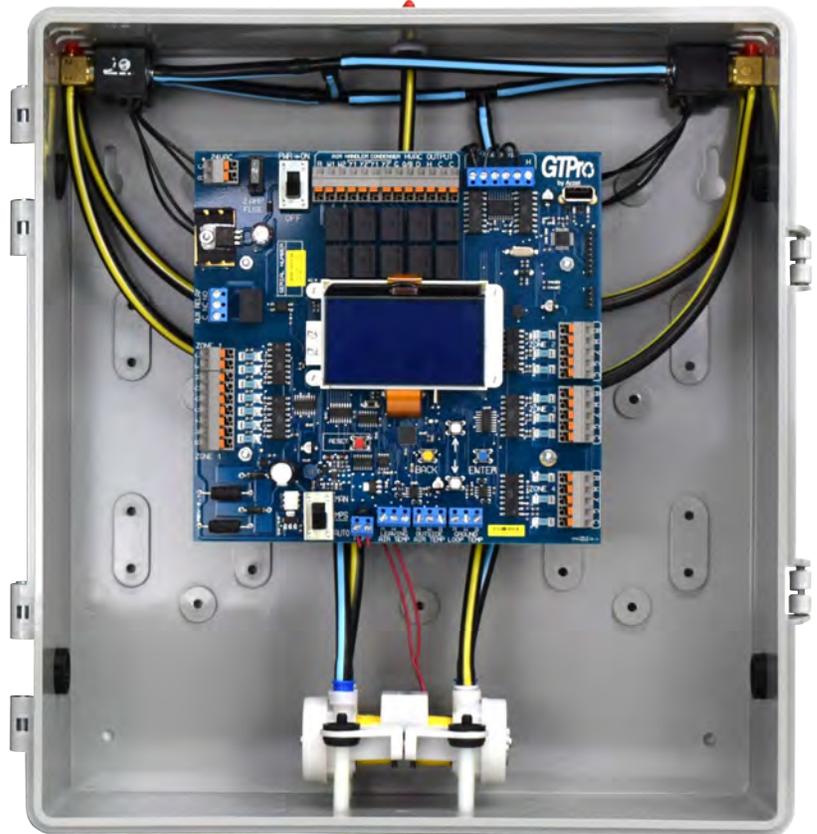


Installation & Operation Instructions

Panel: GTPro™



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Thank you for choosing Arzel!

Thank you for choosing the Arzel® GTPro™ zoning system for your comfort and geothermal energy efficiency needs. The GTPro™ is designed to both enhance your geothermal system's performance and deliver just the right amount of heating and cooling to every area of your home or building.

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



Product Overview

The GTPro™ is a non-proprietary, residential and light commercial zoning system, designed specifically for geothermal systems. The innovative GTPro™ enables customized control and to meet the needs of any geothermal system for maximum efficiency and effectiveness.

GTPro™ Control Features

Pro-Active Staging

The GTPro™ can stage equipment based on one or combination of all of three parameters:

Leaving Air Temperature & Heat staging threshold The GTPro™ can stage the equipment based on the air temperature in the supply plenum and automatically reset the supply air temperature based on outside air temperature. When the field settable heat staging threshold is set to a specific temperature the GTPro™ will stage the equipment to maintain that temperature at 30 °F outdoor air temperature (OAT).

The GTPro™ will automatically adjust the heat staging threshold as the OAT drops. The panel will raise the heat staging threshold 1 ° drops for every 2 ° drop in OAT. The heat stage threshold can be turned on and adjusted or turned off.

Zone Weight

The GTPro™ is capable of staging the compressors based on **Zone Weight**. When this staging feature is turned on the unit will stage up to second stage compressor any time the zone weight exceeds the **air handler stage threshold**. A more detailed explanation is provided in the Set-up Wizard and Zone weight sections.

Timer

The GTPro™ has built in staging timers. The timers can be set to allow the unit to stage from one stage to the next based on elapsed time. There are separate settings for each stage. The 1st to 2nd stage time delay can be used with the loop temperature sensor to decrease the delay timing as the loop temperature drops.

Temperature & Humidity Control Broad Thermostat Compatibility

The GTPro™ is compatible with any conventional 24VAC thermostat including wireless, auto/manual changeover, programmable and non-programmable. Zone 1 will accept any heat/cool or heat pump thermostat. A heat pump thermostat can be used on Zone 1 to provide convenient control of emergency heat. Zones 2-4 must use standard four or five wire single-stage heat /cool thermostats only.

Humidification

With the addition of a humidistat the GTPro™ can control a 24VAC humidifier. Humidifiers can be set to operate independently or with a heating call. In independent operation, without a call for heat, the GTPro™ will engage the humidifier, start the indoor blower and open all dampers. If there is a heating call, the panel will start the humidifier but only open the dampers in the zone that is calling. If set up to operate with a heating call the GTPro™ will only engage the humidifier when there is a call for heat in any zone. By adding an additional solenoid to the panel the GTPro™ is capable of operating humidifier bypass damper.

Dehumidification

With a separate dehumidistat and the **Dehum caller voltage set to 24VAC**, on a call for dehumidification the GTPro™ will engage low stage compressor (Y1) with the continuous blower speed (G) and open all zone dampers. When used with equipment that has a dehumidification function and the **Dehum caller voltage set to 0 VAC** the GTPro™ passes the dehumidify signal from Zone 1 through the output terminals and allows the OEM circuit board to control the dehumidification.

Leaving Air Temperature sensor

The GTPro™ comes with a Leaving Air Temperature (LAT) sensor. **The LAT sensor must be connected to the GTPro™** and enables the GTPro™ to provide Secondary equipment protection at reduced CFM operation and stage down capacity control.

Outdoor Air Temperature sensor

The GTPro™ comes with an Outdoor Air Temperature (OAT) sensor. **The OAT sensor must be connected** and enables the GTPro™ to provide an outdoor reset function, Balance point control, Auxiliary resistant heat lock out and low ambient cooling lock out.

Loop Temperature Sensor

The GTPro™ comes with a Loop Temperature Sensor (LTS). **The LTS must be connected**. It provides low temperature loop protection and assists in staging the unit.

Full Function Dual Fuel Control

The GTPro™ is capable of handling multiple stages of heating and cooling including dual fuel control. No additional sensors or controls are required. Set-up is handled through the Set-Up Wizard.

Auxiliary Relay

The GTPro™ provides a low voltage auxiliary relay on the Panel. In the set up wizard the contractor can choose when to energize the relay.

Test Mode

Bypasses the GTPro™ staging and stages the equipment every two minutes to check HVAC equipment operation.

INSTALLATION PRECAUTIONS

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

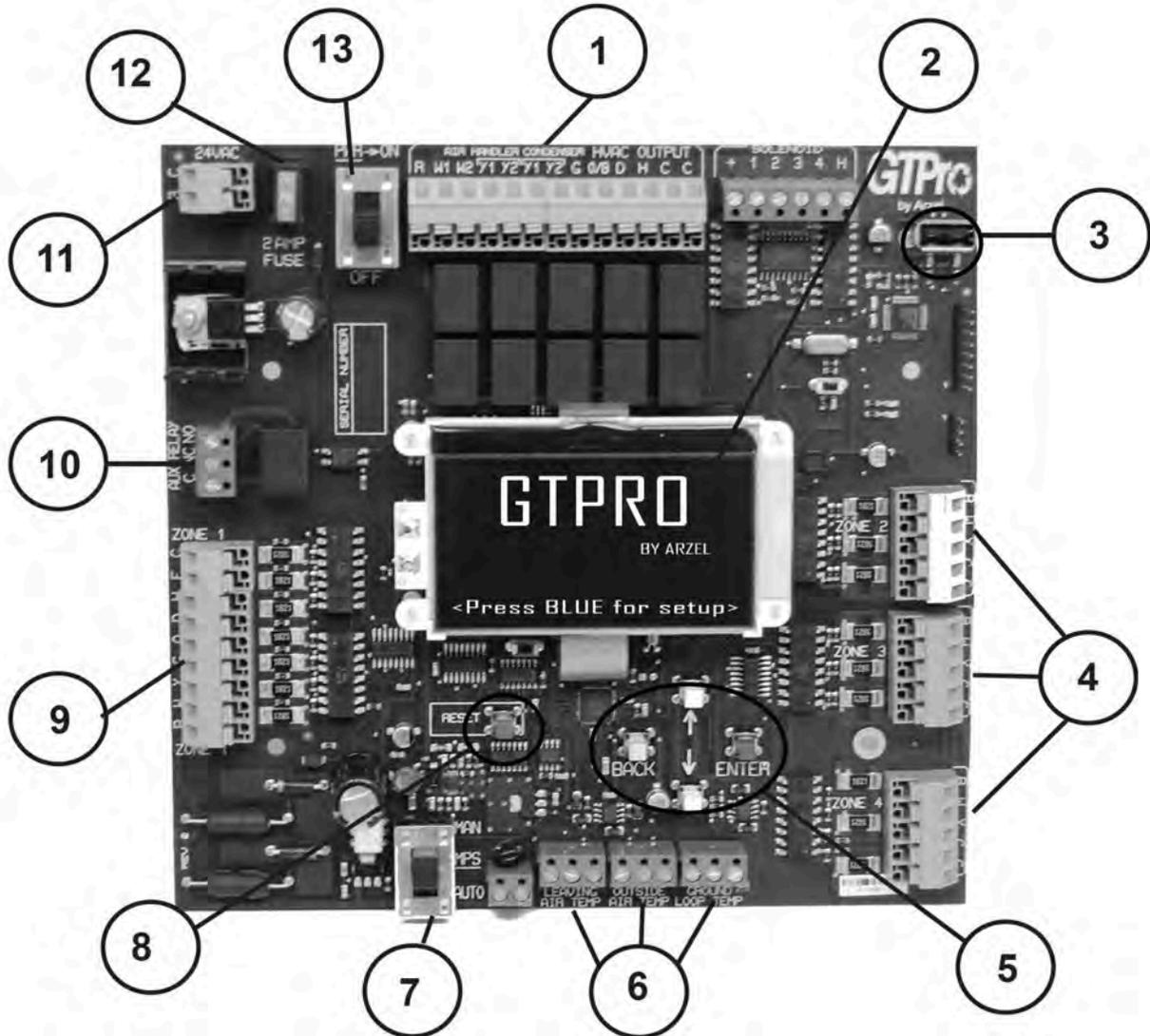
WARNING

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. Verify 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. Always touch a grounded metal object before handling the control panel to avoid potential loss of internal programs due to electrostatic discharge.
3. Install the GTPro™ panel in a non-condensing area with ambient temperatures between 40° F and 140° F.
4. Check all system operations after installation is complete.
5. The damper blade gently wipes the inside of the duct work. Insert a sleeve inside any fiberglass, or abraidable duct work, 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.
8. The purpose of the LAT (**L**eaving **A**ir **T**emperature) control is to function as an "operating limit". When set per the instructions it will add additional capacity control and prevent the equipment from operating outside the OEM's specifications.

BOARD LAYOUT



Item #	Description	Function
1	HVAC Outputs	Dry Contacts to control HVAC equipment
2	Lighted LCD Display	Provides all system information at a glance & simplifies system setup using a guided Set-Up Wizard
3	USB Port	Connection for data download to USB flash drive
4	Zone 2 through Zone 4 Inputs	Four or five wire thermostat inputs (Heat/Cool Thermostats Only)
5	Navigation Buttons	Provides programming interface for Set-Up Wizard
6	Sensor Inputs	Connections for Leaving Air Temperature (LAT) and Outdoor Air Temperature (OAT) and Loop sensors. All sensors MUST be installed for proper operations.
7	MPS Switch	Auto/Manual switch for the Mini Pump
8	Reset Button	Allows access to the Set-Up Wizard. Does not reset settings.
9	Zone 1 Input Terminal	Inputs for any 24 VAC thermostat, heat pump or heat/cool
10	Auxiliary Relay	Used to control external 24v components, 3 amp max.
11	24VAC Power Input	Arzel transformer connections "R" & "C" (40VA)
12	2-Amp Fuse	Protects the board against thermostat wiring shorts
13	Power Switch	Controls 24VAC power source to zone control panel

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

- 1) 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.
- 2) **DO NOT MOUNT PANEL ON DUCTING OR THE HVAC EQUIPMENT. DO NOT MOUNT ON STAIRWELL WALL OR OTHER SENSITIVE AREAS (BEDROOMS, HOME OFFICES...)**
- 3) The best method is to attach a piece of 3/4" plywood to a solid wall or foundation.
- 4) Hold the panel level on the wall and mark the positions of the upper mounting holes.
 - a) Drive two screws into the wall leaving the heads at least 1/2" out. Set the panel over the screws.
 - b) 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.

2. Connect Thermostats

- 1) Install one thermostat for each zone.
- 2) Use 18-gauge, multi-conductor, solid thermostat wire to connect the thermostats to the control panel.
- 3) Zone 1 thermostat can be a heat pump or standard heat/cool thermostat.
 - a) If zone 1 thermostat is a heat pump thermostat:
 - b) Configure the thermostat to energize the reversing valve in cooling.
 - c) In the set up wizard set **zone 1 stat** type to heat pump

- d) If the equipment requires the reversing valve to be energized in heating, set the "reversing valve energize in" to heating in the set up wizard.
- e) If zone 1 thermostat is a heat/cool thermostat:
- f) In the set up wizard set zone 1 stat type to Heat/Cool
- 4) Zones 2, 3 and 4 must be standard heat/cool thermostats.
- 5) The common on the thermostat connections is not required by the board to be connected to the thermostat.
- 6) Document the location of each thermostat connected to each zone on the "Zone Layout" label on the side of the panel.

3. Connect Equipment

- 1) Review the wiring diagrams on the following pages and select the one that matches your system.
- 2) 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.
- 3) For split system applications, connect Y1, Y2 "Air Handler" to the blower or furnace controls.
- 4) Connect Y1, Y2 condenser to the outdoor unit or the package geothermal unit.
- 5) The two "C" terminals are for connection between the furnace/air handler transformer and the common circuit of the heat pump/air conditioner controls. A common wire must be run from the HVAC outputs to the air handler/furnace.
- 6) The 24 volt power for the outputs is provided by the equipment transformer.

4. Connect Transformer

- 1) 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.
- 2) Plug in the transformer to any standard 120VAC receptacle. *Note: The provided transformer also provides surge protection. If you elect to not use the provided transformer proper power conditioning is required or your warranty will be void.*
- 3) The Arzel® transformer will power the panel and thermostats.

5. Install Damper

See Damper Installation page 23+24

Installation & Setup Instructions

6. Connect Sensors

Installation Notes

- 1) The sensors are identical and can be used as the LAT, OAT, or loop.
 - a) The sensors must be connected to the board for proper functionality; non-heat pump applications do not require the OAT sensor to be located outside.
 - b) If additional wire length is required on a sensor, up to 50 ft. of 18-3 thermostat wire can be added.
 - c) Keep panel power "off" while connecting sensors to the board.

Sensor location here



7. LAT Sensor Installation

- a) Install the leaving air temperature sensor in the supply duct 12 to 18 inches from the plenum and before any dampers.
- b) Wires must be connected to corresponding terminals, R-red, W-white and B-black.

8. Outdoor sensor installation

An OAT sensor enclosure is provided to protect the outdoor sensor from physical damage as well as snow, ice and solar heat influence.

- a) Choose a location:
 - i) Out of direct sunlight
 - ii) Above maximum snow level
 - iii) That is accessible should service be required
 - iv) A location on the north side of the house is preferable
- b) Drill a 5/16" access hole through the exterior wall aligned with one of the pre-drilled holes on the back of the enclosure body. If the sensor wire is to run along the outside of the structure, use opening located at the bottom of the enclosure.
- c) Mount the sensor enclosure level over the access hole with the sensor opening on the back plate aligned with the 5/16" opening.
- d) Fasten with appropriate screws being cautious not to over tighten, flexing the box out of square
- e) Route the sensor lead into the sensor enclosure and fasten with the provided wire tie.

9. ALTERNATIVE SENSOR MOUNTING

- a) Sensor can be mounted inside the control section of the outdoor condensing unit.
- b) Ensure sensor is mounted in a location where its temperature reading will not be influenced by the equipment.

10. Loop Temperature installation

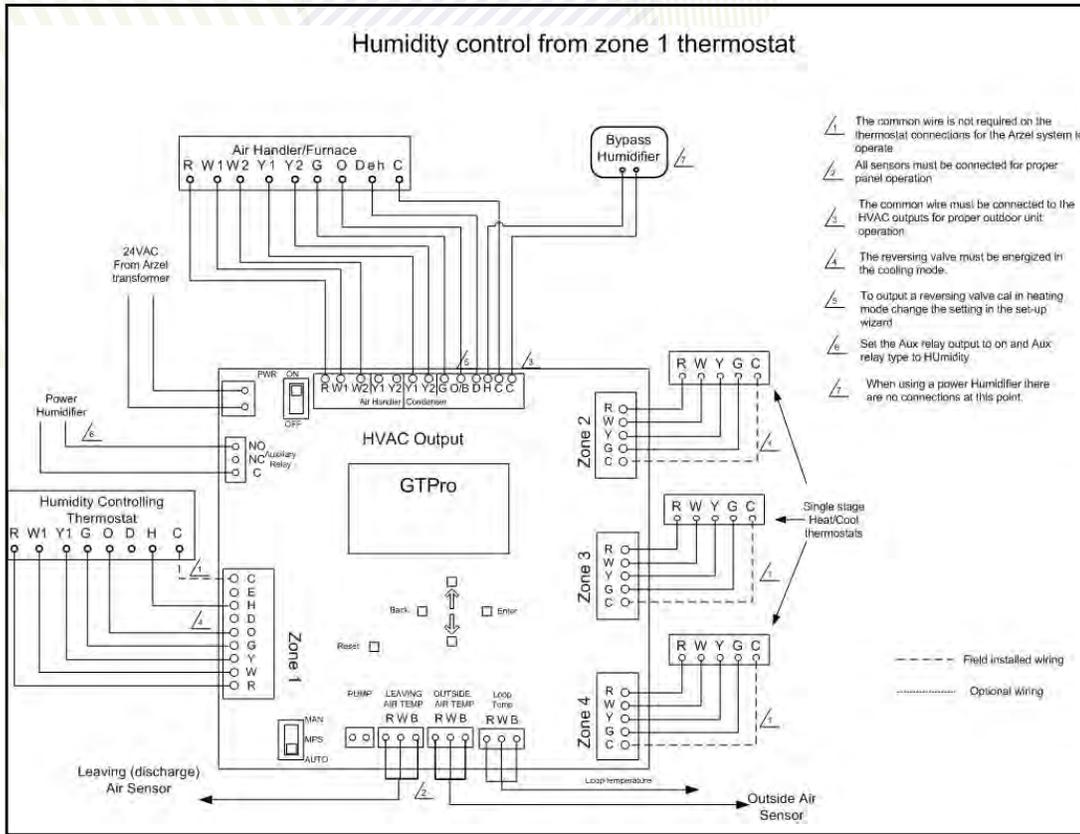
- a) The loop temperature sensor should be secured to the ground loop inlet pipe.
- b) Sensor should be insulated.

11. Turn on Panel and Run the Set-Up Wizard

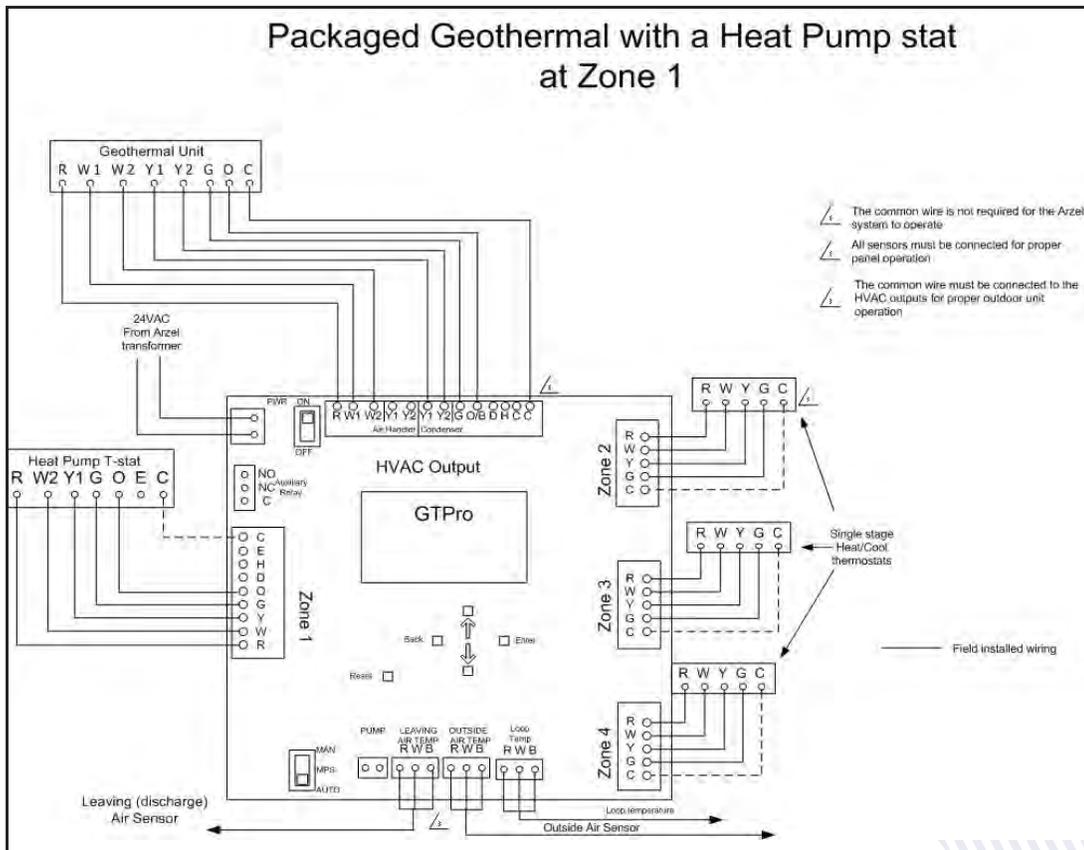


Wiring Diagrams

Humidity control from zone 1 thermostat

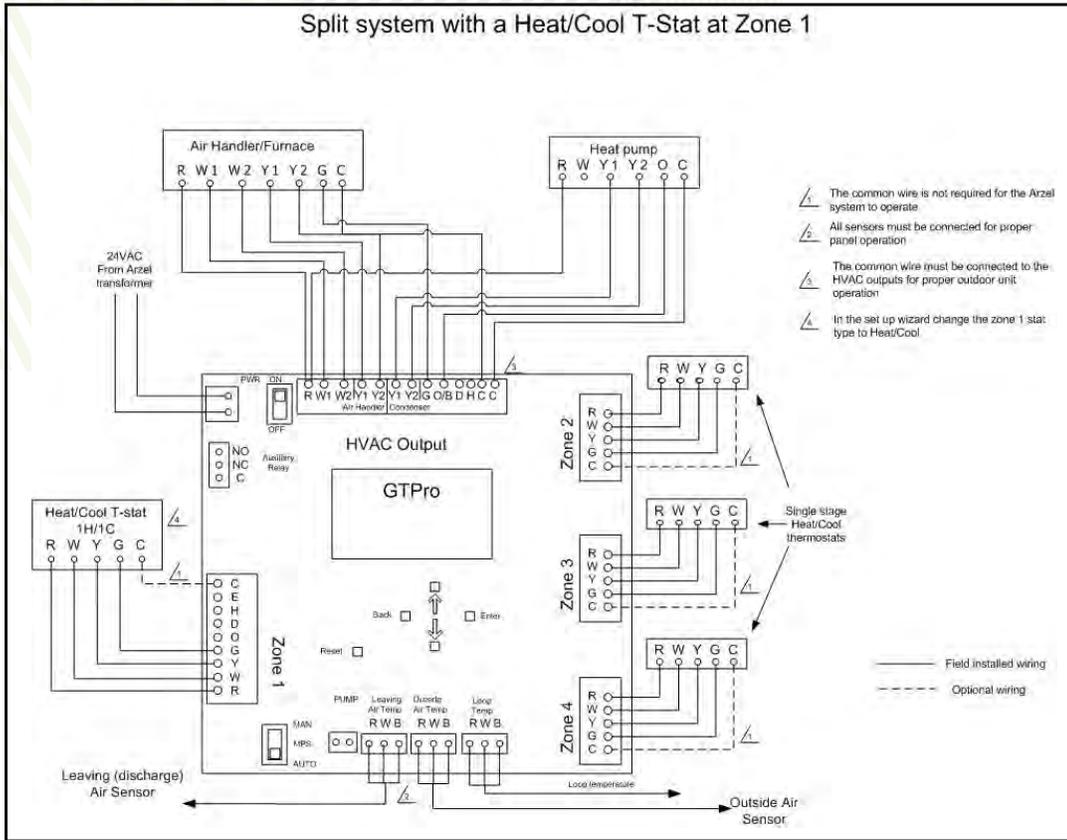


Packaged Geothermal with a Heat Pump stat at Zone 1

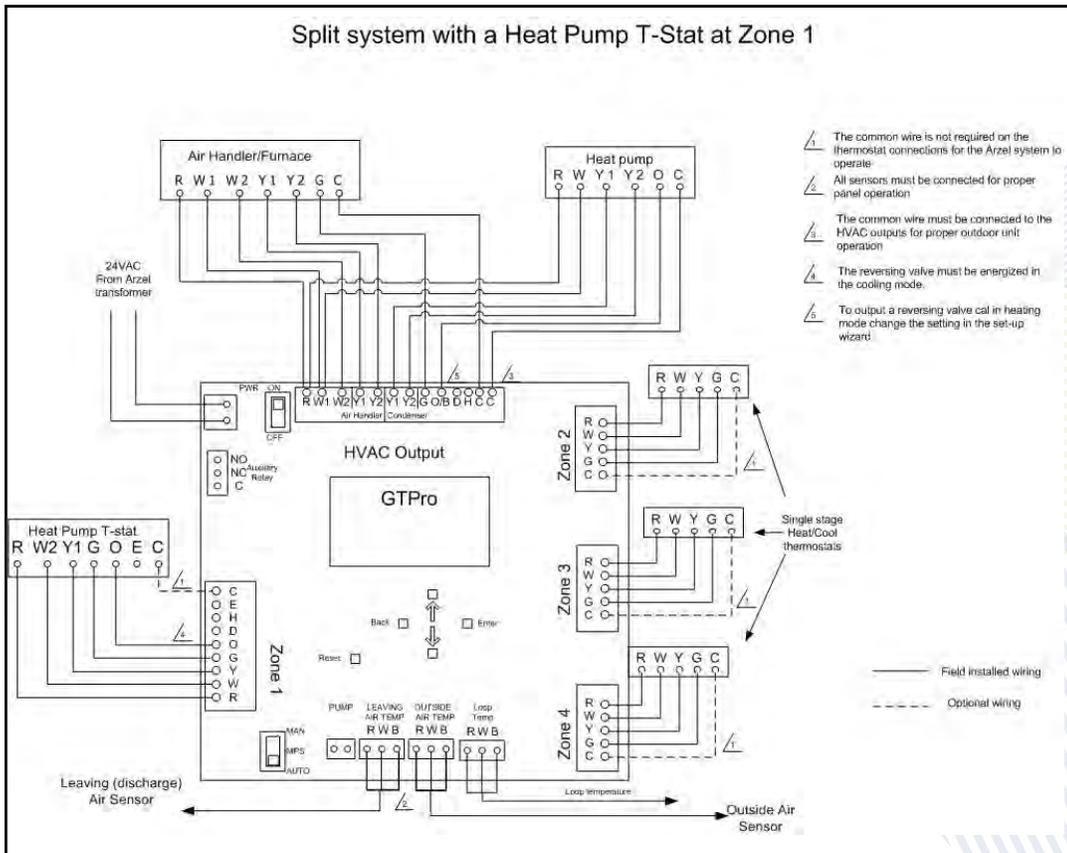


Wiring Diagrams

Split system with a Heat/Cool T-Stat at Zone 1

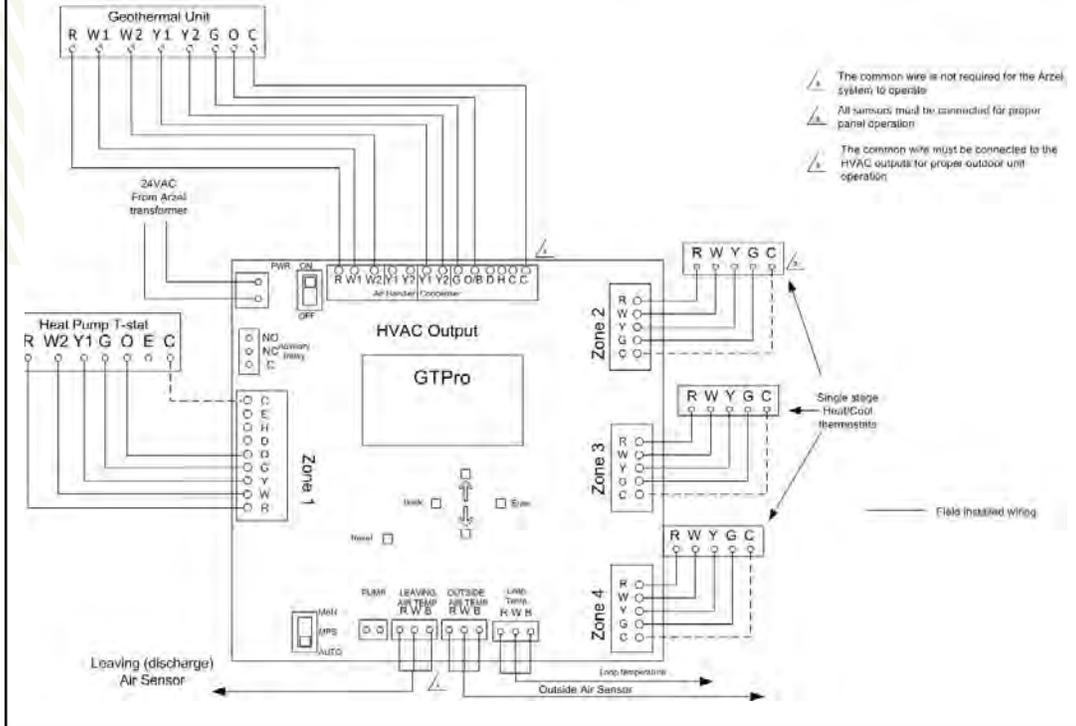


Split system with a Heat Pump T-Stat at Zone 1

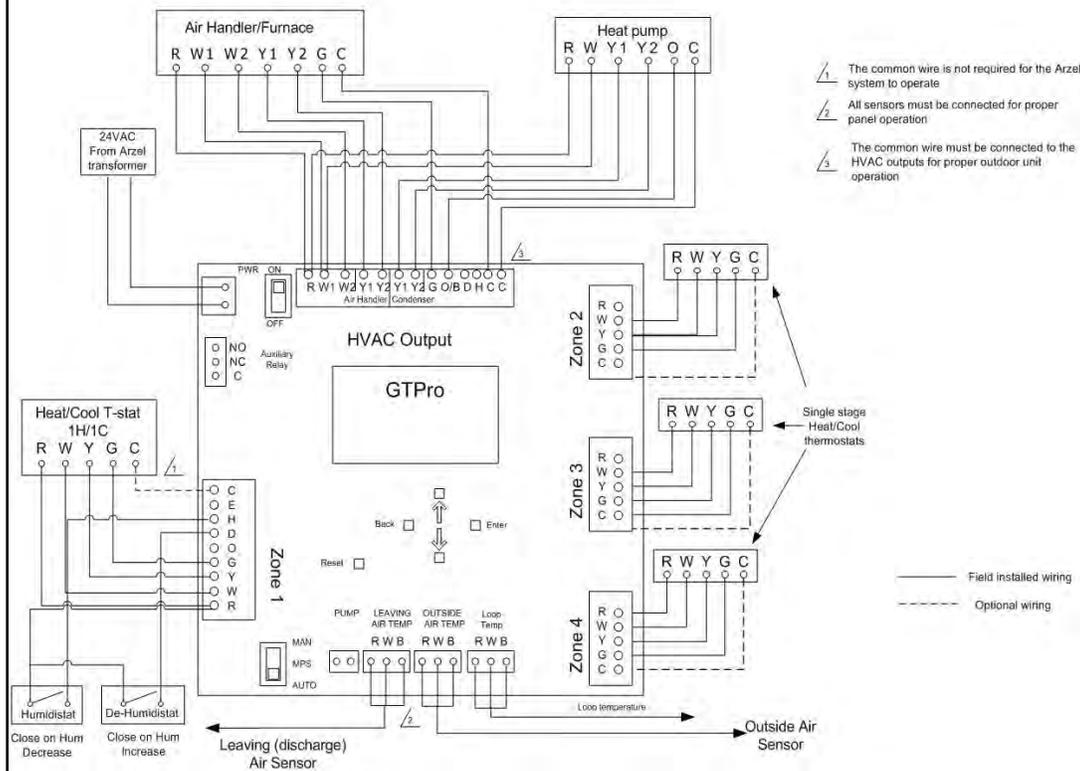


Wiring Diagrams

Packaged Geothermal with a Heat Pump stat at Zone 1



Split system with a Heat/Cool T-Stat at Zone 1 And separate humidity control



Set-Up Wizard

Default settings are Arzel®'s best approximation for systems in general. **Defaults should not be construed as suggested settings. They will not be right for any particular system. Contractors must select appropriate settings or the GTPro™ may make inappropriate choices. Contractors are the experts on their equipment, local conditions, and requirements.*

To Program the GTPro™ with the Set-up Wizard:

1. Power on the Board or Push the Red Reset button. You will notice some flashing LEDs on the board. That is a normal part of the startup process. Do not press any buttons while the system is initializing.
2. The GTPro™ Splash screen will appear. Notice the message.
3. Push the Blue “Enter” button – This will cause the board to enter the Set-Up Wizard Mode. The top of the Screen will indicate Set-up Wizard and it will step through all of the options.
4. Make any selection changes by pushing the white up and down arrows.
5. Move to the next set-up parameter by pushing the Blue “ENTER” Button.
6. The yellow “Back” button will step you backwards through the wizard steps.

Note: Selections are only saved when the blue button is pushed after the “Demo Mode” question. If you make any changes in the “Set-Up Wizard” you must page through all of the parameters to lock in your changes.

The yellow “Back” button will step you backwards through the wizard steps.

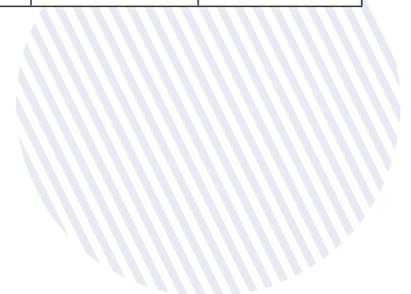


Below are the setup categories in the order they appear in the software. The Setup Worksheet in the back of the manual can be used to document your settings. All settings are held in memory even when power is interrupted. To view options or make changes after initial setup, simply press the red "RESET" button and proceed through the setup categories, making any necessary changes, using the white "UP" and "Down" button. Not all selections will appear when configured.

Settings	Description	Options	Defaults
System Type	Select the system type to get the appropriate set up menu 2H/1C/PSC-any system that has up to 2 stages of heating, 1stage of cooling and a blower that cannot be staged. 4H/2C-ECM- any system that has up to 4 stages of heating, 2 stages of cooling and a blower that can be staged with low voltage inputs.	2H/1C/PSC 4H/2C/VAR	4H/2C/ECM
Temperature Display	Determines the temperature display scale on the GTPro™	Fahrenheit Centigrade	Fahrenheit
Mode Priority	<p>Determines how the system handles situations where a zone is calling for heating while another zone is calling for cooling. Priority options include Automatic, Heating, Cooling, or Zone Weight Priority.</p> <p>In Automatic Priority: Auto priority will allow the first call (either heating or cooling) to establish the priority sequence for this cycle. A heating or cooling call will always override fan-only operation. Any zone can initiate constant fan if no other zone has a demand for either heating or cooling.</p> <p>In Zone Weight Priority: Zone Weight priority allows the call in the largest weighted zone(s) to have priority over any opposing calls in the smaller zones. The board continues that call until the largest weight zone is satisfied or the opposing call becomes the larger zone.</p> <p>In Heating Priority: Heating priority allows heating to have priority over cooling. Any zone calling for heating will be served immediately; if a cooling cycle is in process it will be terminated. The mode being served will be limited to a 20 min. cycle.</p> <p>In Cooling Priority: Cooling priority allows cooling to have priority over heating. Any zone calling for cooling will be served immediately if no other zone wants cooling. Any zone can have constant fan, if no other zone wants cooling or heating.</p> <p>Note: In Heating, Cooling and Automatic Priority the board will serve the priority caller for 20 minutes then the opposing call for 20 minutes and rotate until all calls are satisfied.</p>	Zone Weight Heating Cooling Automatic	Automatic
Zone 1 stat type	Type of thermostat used in zone 1 Enter the type of thermostat you are connecting to Zone 1 of the GTPro™ panel	Heat Pump Heat/Cool	Heat Pump
Zone 1 Weight	Zone 1 relative weight Enter the percentage (approximate) of duct work served in each zone. (i.e. Count the number of branch runs in each zone and divide by the total system runs) This can be manipulated to give a zone more air flow and/or priority, i.e. sum of zones does not need to equal 100%	10%- 100% 5% increments	100%/#zones
Zone 2 Weight	Zone 2 relative weight	10-100%, 5%	50%
Zone 3 Weight	Zone 3 relative weight	10-100%, 5%	50%
Zone 4 Weight	Zone 4 relative weight	10-100%, 5%	50%
A.H. Stage-up Threshold	CFM Stage-up threshold, Y2 output to Air Handler or W2 to FF Furnace engaged when threshold % is reached Set the percentage of duct work you would want to be open before the GTPro™ panel will send a Y2 signal to the air handler to increase CFM or W2 signal to furnace to increase output capacity and CFM	40%-100%, 5%	50%

Settings	Description	Options	Defaults
Stage Con. on Zone weight	When set to ON the panel will stage the air handler and condenser any time the zone weight is above the AH stage threshold; when it is set to OFF it will only use it to stage the air handler.	On/Off	Off
Heat Stage Threshold	Min leaving air temp required for comfort at 30 OD Temp. This set point resets by 1° for every 2° degree change in ODT Sets the minimum supply air temperature in the heating mode. At the factory default the GTPro™ will maintain a 100° F supply air temperature at 30° F outdoor temperature.	Off/70°-110° F	100°F
Stage timer	Turn on to use the delay timers to stage the unit. *The delay timer settings will not appear if the heat stage timer is turned off.	On/Off	Off
1 st -2 nd stage delay	Set the time delay to engage 2 nd stage compressor.	3-30/off	20 minutes
2 ⁿ -3 rd stage delay	Set the time delay to engage 1 st stage back up heat.	3-30/Off	20 minutes
3 rd -4 th stage delay	Set the time delay for second stage back up heat.	3-30/off	20 minutes
4 th stage lock out temperature	The 4 th stage of heat (W2) will be locked out until the outdoor temperature is below this setting.	10°F-40°F/ Lock in	20°F
Cool Stage Threshold	Max cooling supply air temp, Y2 con is energized if this LAT is not reached with Y1 con output Sets the maximum supply air temperature allowable before bringing on second stage cooling. Does not reset with OAT	20°-60°F	42°F
Loop reset temperature	The loop temperature at which the delay timing between first and second stage will start to reset.	Off 30°-50v	43°
Rate of reset	Set the time in minutes; the timing will decrease per 1°F drop in loop temperature	2,3,4minutes	3
Heat Pump High limit	High limit of Heat Pump leaving air temperature Set the maximum allowable supply air temperature in that pump mode	100-150	
AUX LAT High Temp	Aux "W" output leaving air temp high limit Set the maximum allowable supply air temperature in fossil fuel or electric resistance heat operation.	130°-180 ° F, 1°F steps	150°F
Loop low limit	The temperature at which the panel will turn off the condenser and operate the backup heat.	Off 25°-40°	35°F
Cooling LAT Low Temp	Cooling leaving air temp low limit Set the minimum supply air temperature in the cooling cycle to prevent the coil from freezing	34°-46°F, 1°F steps	42°F
Type of Back-up Heat	Specify type of Aux "Back-Up" heat Select the type of heat that will be initiated when the heat pump can no longer maintain the setting of the heat stage threshold.	Electric or Fossil Fuel	Electric
Balance point OAT	Heat Pump operates above the balance point setting and the backup heat operates below the set point. Set the outdoor temperature at which you want to lock the heat pump out and have the backup take over on a call for heat.	Off, 0--40°F	30°F

Settings	Description	Options	Defaults
Back up lock out temp	The backup heat will not operate when the outdoor temperature is above the setting. Set the outdoor temperature at which you want to lock out the back up heat.	0-40°F/ Lock-in	20°F
Secondary Purge time	End-of-cycle time to diffuse residual heating or cooling Set the amount of time in seconds to run the pump after a cycle to open all the dampers. Typically 5 seconds per damper.	0-180 seconds, 10 second increments	60 seconds
Rev Valve Energized	Heat pump rev valve energize in heating or cooling (Zone 1 HP stat always calls "O" for clg call) Note: If the heat pump thermostat has a setting for reversing valve in the configuration mode set the thermostat to energize the reversing valve in cooling Set the mode in which the reversing valve is energized.	Cooling or Heating	Cooling
Back-up Controls Fan	G output for fossil fuel heat operation True="W" False="W", "G" Select true if the back-up heat source controls the fan internally or false if the GTPro™ needs to initiate the fan.	True or False	TRUE
Auxiliary relay output on	Turn the Auxiliary relay on	On/Off	Off
Auxiliary relay type	Select the mode or function when the auxiliary relay is to switch	Heat/Cool/ Hum/Cust	
Humidity	Turn humidity function on or off	On/Off	Off
Humidity operation	Choose whether the humidifier operates any time there is a call for humidity or with a heating call only	Independent/ heat	Heat
	Turn the dehumidification functions on or off	On/Off	Off
Dehumidifier Call Voltage	Required voltage to energize a dehumidification call. (Note: Leave setting at 24v when not used.) Set to the dehumidification control voltage output on the dehumidistat control.	0 Volt or 24 Volt	24 Volt
Dehumidification Cycle time	Dehumidification "On Cycle" time limit to prevent over-cooling of space once cooling set-points are reached (off cycle is fixed at 10min) Set the maximum "ON" time for the dehumidification cycle to prevent over cooling of the space. The "OFF" cycle is set at a fixed time of 10 minutes.	5-15 minutes, 5 minute increments	10 minutes
Clock	Set clock time		
Test mode	The test mode is used to test the operation of the HVAC equipment without having to wait for the GTPro™ to stage.	True/False	Off



Zone Weight Calculation

Demo Mode Enable	The Demo mode is for display purposes only. This parameter should always be set to false.	True/False	FALSE
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Y2 (High Stage) blower and W2 (High Stage) FF Furnace capacity will be engaged any time the accumulated, served zone weight is equal to or greater than the AH Threshold setting in the Set-Up Wizard.

The following is an example of “Zone Weight” and “Air Handler Threshold” set-up to demonstrate the functionality behind the settings you choose.

The application below is a two story home being served by four independent zones. The zone weights are determined by simply dividing the number of runs in each zone by the total number of runs in the system. Total zone weight does not need to add up to 100% and may, in fact, be over or under weighted to produce the desired results.

Zone 1 Living area, 1st Fl (5-6” runs/20 = 25%)

Zone 2 Living area, 1st Fl (6-6” runs/20 = 30%)

Zone 3 Master Bdrm Suite, 2nd Fl (4-6” runs/20 = 20%)

Zone 4 Bedrooms, 2nd Fl (5-6” runs/20 = 25%)



Alternate “AH Threshold” setting for the above example:

AH Threshold Set-Point	Stage-up occurs when:
100%	All 4 Zones call together
80%	Zones 1, 2 & 4 call together
70%	Any 3 Zones call together
55%	Zone 2 with either 1 or 4 call together

Downloading & Uploading Settings

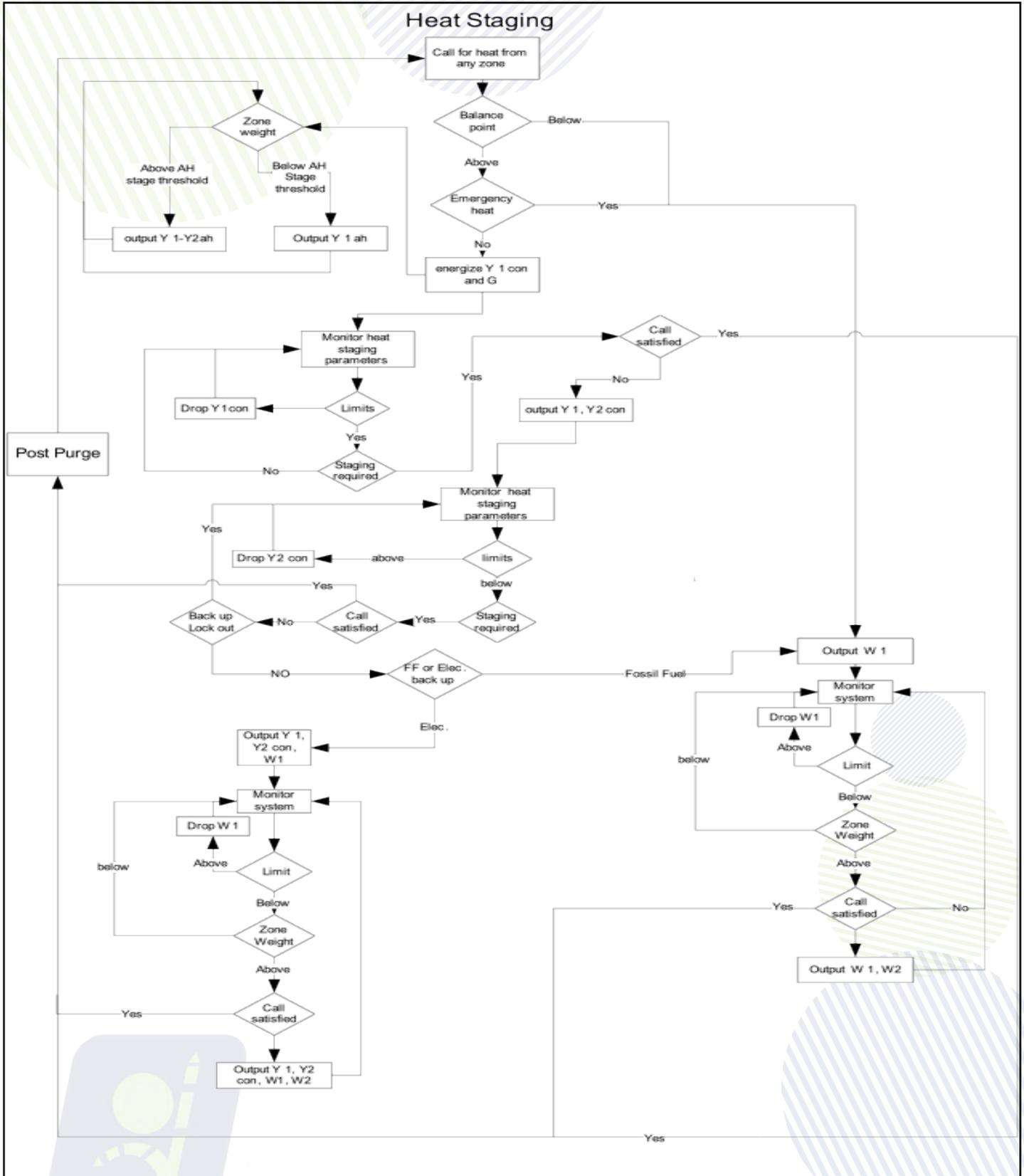
Zone weight settings should provide maximum airflow to zones calling, without creating objectionable air noise at the registers. Since many systems serve a single zone the majority of the time, low stage energy savings will be achieved.

To download the data from the GTPro™ panel:

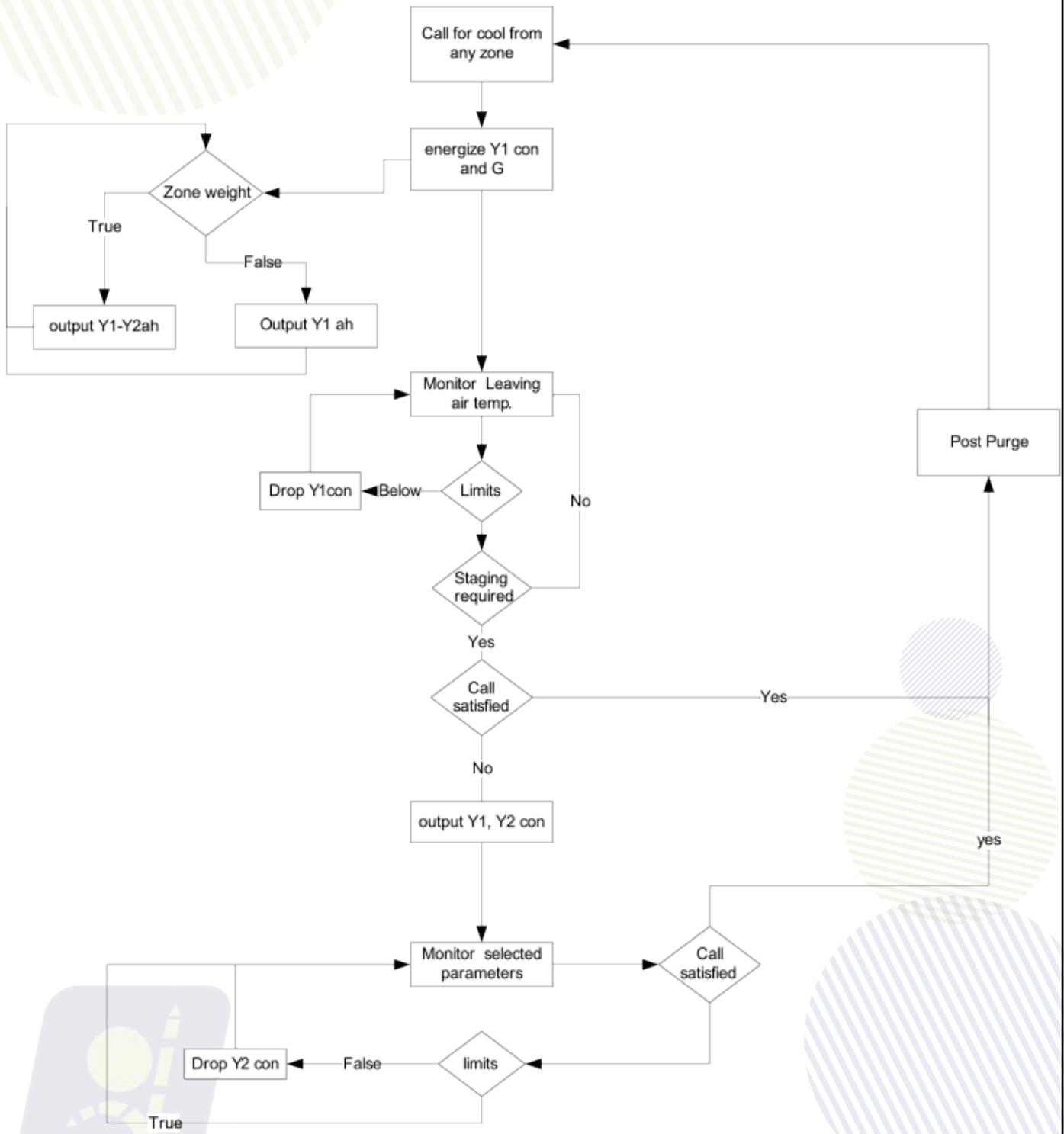
1. Insert a USB flash drive in the USB port in the upper right hand corner of the circuit board
2. Press the red reset button.
3. On the screen “Save Log?” will be displayed.
4. Press the up arrow to save the data to the USB flash drive
5. The file will appear on the drive as GTPro™ on the flash drive
6. The file can be opened using Microsoft Excel
7. To erase the downloaded data from the GTPro™ panel
 - a. Press the blue enter button
 - b. On the screen “Start new log” will appear on the screen.
 - c. Press the up arrow to erase the existing data.



Sequence of Operation



Cooling Sequence of operation



System Commissioning

To ensure the Arzel® GTPro™ zoning system operates properly after completing all installation and system configuration steps, please follow the procedures below for commissioning the system.

Damper Verification

1. Set all thermostats to the OFF mode and all thermostat fan switches to AUTO.
2. Turn the HVAC system and the GTPro system PWR switches to ON.
3. Verify proper LAT and OAT temperature readings on the display screen.
4. Turn the Zone 1 thermostat fan switch ON. The fan in the HVAC system will turn on. Check the air flow at all registers to determine that only Zone 1 dampers are open and all other dampers are closed.
5. Follow the above procedure for all other zones.

Air Handler Stage Threshold and Heat Threshold Checkout

1. Set all thermostats to the OFF position. Set the demo mode to true in the Set-Up Wizard.
2. Remove the leaving air temperature (LAT) sensor from the supply duct work.
3. Initiate a call for heat on Zone 1, a Y1 and G signal to the air handler and a Y1 signal to the condenser will appear on the display screen.
4. Initiate a call in a second zone that will raise the zone weight threshold above its setting. A Y2 signal to the air handler will appear on the display screen and blower will ramp up to second stage.
5. Allow the unit to run in heating mode, a Y2 signal will appear and the second stage on the condenser will energize.
6. Allow the unit to continue to operate and a W1 signal will appear on the display screen and energize the first stage back-up heat.
7. Allow the unit to continue to operate and a W2 signal will appear on the display screen and energize the second stage back-up heat.
8. Turn thermostats to off and allow system to cycle off; do not reinstall LAT sensor at this time.

Cooling Stage threshold checkout

1. With the LAT sensor removed from the duct work initiate a call for cooling from any zone.
2. The Y1, G and O signal will appear on the display screen and send a first stage cooling signal to the air handler and the condenser.
3. Allow the unit to continue to operate. A Y2 signal will appear on the display screen and send a second stage cooling signal to the condenser.
4. Turn the thermostat to OFF and install Leaving Air Temperature into the supply duct.
5. Reset the demo mode to false in the Set-Up Wizard.

Balance Point Checkout (Fossil Fuel Backup)

1. Raise the balance point temperature setting above the outdoor air temperature or submerge the outdoor air temperature sensor in a cup of ice to lower the reading.
2. Initiate a call for heat in any zone.
3. The W1 signal will appear on the display screen and initiate a call for the fossil fuel heating equipment.
4. Turn zone thermostat off and allow the heating equipment to cycle off.



Customer Orientation

1. In an effort to eliminate end user misunderstandings and potential call-backs, review the Set-Up Wizard parameters and explain how the system should be expected to function.
2. Go over thermostat locations and functions and advise on the most energy saving set-back settings (setting back all zones during their unoccupied period will provide the best savings).
3. If Zone One thermostat is equipped with an "Emerg Heat" mode explain when and how to use it and the expected equipment operation in the Emerg Ht mode.

If an Emergency Heat Switch is desired and the Zone 1 thermostat is not a heat pump model or there are not enough conductors to provide an "E" circuit, then a remote "Emer Ht" switch can easily be wired to the board.

Bypass Adjustment and Checkout

1. Set smallest zone to appropriate zone weight threshold
2. Initiate highest expected blower operation heating or cooling call
3. Adjust the bypass closed and have the customer determine if the air noise is objectionable. The customer must be informed that elevated air delivered into the smallest zone is critical to effective system operation when a single zone calls.
4. Adjust the bypass in small increments until the objectionable noise is eliminated. (Bypass is only done to eliminate objectionable air noise, consult the homeowner to determine their needs).
5. Initiate call in other small zone or zones until AH stage threshold upstages equipment and reverify with equipment blower operating at highest capacity.



Fill in the right-hand column with the Set-Up Wizard settings that you use when programming the panel. Record the setup date. If any settings change, record those changes and the date they were made.

Function	Options	Settings			
		Initial Set-Up Setting	Date	Adjusted Setting	Date
System Type	4H/2C/ECM or 2H/2C/PSC				
Temperature Display	F/C				
Mode Priority	Auto/Heat/Cool/Zone weight				
Zone 1 T-Stat Heat Pump-	Heating/Cooling				
Z1 Weight Zone 1: 10%	90%				
Z2 Weight Zone 2: 10%	90%				
Z3 Weight Zone 3: 10%	90%				
Z4 Weight Zone 4: 10%	90%				
Air Handler Stage up Threshold	30%-100%				
Stage Con. On Zone Weight	On/Off				
Heat Stage Threshold	70°F-130°F/21°C-55°C				
Stage Timer	On/Off				
1 st -2 nd stage Timer	Off/2-30 Minutes				
2 nd -3 rd stage Timer	Off/2-30 Minutes				
3 rd -4 th stage Timer	Off/2-30 Minutes				
4 th stage Lock Out	10°F-40°F/-12°C-5°C/Lock-in				
Cool Stage Threshold	20°F-60°F/-6°C-15°C				
Loop Reset Temperature	Off/30°F-50°F/-1°C-10°C				
Rate of Reset	2-4 Minutes				
H.P. LAT High Limit	100°F-125°F/38°C-52°C				
AUX LAT High Limit	130°F-180°F/55°F-83°C				
Loop low Limit	Off/25°F-40°F/-4°C-5°C				
Cooling LAT Low	34°F-46°F/1°C-7°C				
Type of Back-up	Electric/Fossil Fuel				
Balance Point-OAT	0°F-50°F/-17°C-10°C				
Back up Lock out Temp	Lock-in/-10°F-40°F/-23°C-5°C				
Secondary Purge Time	0-180 Seconds				
Rev Valve Energized	Cooling/Heating				
Back up Controls fan	True/False				
Aux relay output on	On/Off				
Aux relay type	Heat/Cool/Humidity/Custom				
Humidity	On/Off				
Humidity Type	With Heat/Independent				
Dehumidification	On/Off				
Dehum. caller Voltage	0vac/24vac				
Dehum cycle time	5/10/15 Minutes				
Real time Clock	Hour/Minutes				
Test Mode	True/False				
Demo mode enable	True-False				

Zoning Setup Worksheet

Zone Tube	Color	Total # Dampers	T Stat Located In
1			
2			
3			
4			



Ezy-Slide Damper Install

A visual aid to installing both the round and rectangular Ezy-Slide® 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



Ezy-Slide 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.



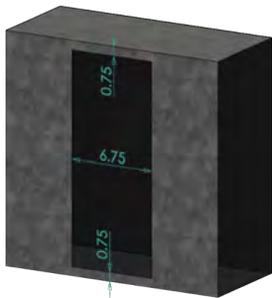
7. Finished!

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

The Panel serial number is required when entering warranty information, please see image below:



Warranty Procedure

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

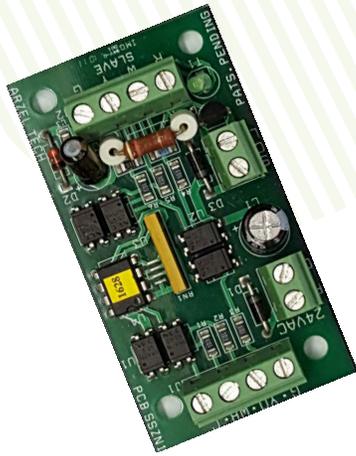
Warranties returned to distributors without prior authorization may be denied or subject to 20% processing fee.

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.

Did you know?

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

The Arzel® FACT System brings in fresh air any time 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/training 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.

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