ZoneFirst ZCG Zone Control Gateway Installation Guide

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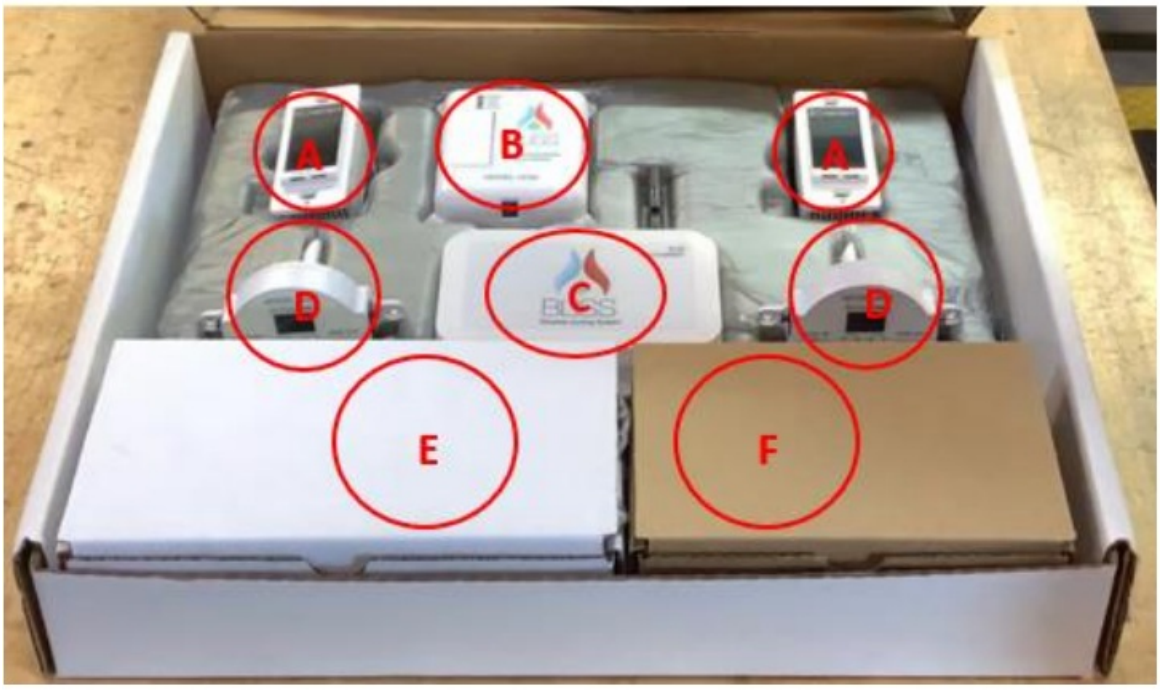
INTRODUCTION

An Internet of Zoning – IoZ™ Kit comes with equipment for either a 2-Zone or 3-Zone system. Orders with additional zones will have adder zone boxes delivered with the kit. See E below. This installation guide will walk you through the necessary devices required for an IoZ system of any size, the functionality of each device, and a detailed step-by-step guide to how the system works and how to re-install the system. After following this guide, you should be comfortable with the functionality of the IoZ display and answer any questions that come your way.



IoZ™ Kit Overview

- A. Invis-A-Stat™ / Light Switch Thermostat (LST)
- B. HVAC Control Module (HCM)
- C. Zone Control Gateway (ZCG)
- D. Wireless Damper Sensor (WDS)
- E. Adder Zone (Additional LST & WDS)
- F. Hardware (screws, wire nuts, cables, etc.)

ZONE CONTROL GATEWAY – ZCG

The ZCG or the Zone Control Gateway is responsible for connecting to all other devices, i.e. LST, WDS & HCM. Once the connections are established, the ZCG communicates via Wi-Fi or ethernet to the internet to allow accessibility from the mobile app.

The ZCG has 3 LED light indicators

- **PWR:** Responsible for showing power to the ZCG, if power is active, the LED will turn a solid GREEN light.
- **LED1:** Responsible for showing the access point. During the installation, you are required to establish a connection to the ZCG using a local access point. When active, not only will the LED turn a solid GREEN light, but there will also be a network along the lines of ZCGxxxxxxxxxxx available for connection. When the access point is disabled, the LED will turn a solid RED light and the network will no longer be available in your Wi-Fi settings.
- **LED2:** Responsible for showing connection to the internet. For the whole system to communicate to the mobile app, an internet connection is required. When the LED is a solid GREEN light, there is an active connection to the internet. A connection can either be done through Ethernet (located on the back of the ZCG) or Wi-Fi (connected to your local Wi-Fi connection). When the LED is a solid RED light, there is no active connection to the internet.

The ZCG has 2 push buttons

- **SW1:** When pushed for 15 seconds, the local access point will become available. This will also trigger LED1 to

turn a solid GREEN light. When held for 30 seconds, all of the components flash and not only will the ZCG factory reset, but if there is an existing system already connected, the system will also be factory reset to its original Bstate.

- **SW2:** Will be used in the future.

On the back side of the ZCG you will find an antenna (used for Wi-Fi functionalities), an ethernet port and a 5VDC port. It is crucial that the ZCG uses the supplied WHITE power supply or 5VDC equivalent. Failure to do so will result in burning out the ZCG due to a higher voltage.

HVAC CONTROL MODULE – HCM

The HCM or HVAC Control Module is responsible for communicating to your HVAC equipment. Any heat or cool calls made from the thermostat (LST) or the mobile app will communicate directly to the HCM to send a signal to the HVAC equipment. Along with that are 3 plug-in ports only used for connections to the WDS.

The HCM has 4 LED light indicators

- **POWER:** Responsible for showing power to the HCM, if power is active, the LED will turn a solid GREEN light.
- **MODE:** Responsible for showing the active mode. If there is an active call and an opposite call is made, there is 20 minute changeover time with a 2 minute purge between calls. If the test mode is active, the changeover time is reduced to 30 seconds while the purge takes roughly 5 seconds.
- **WHITE:** Flashing LED indicates the system is not configured or not connected to anything
- **GREEN:** Solid LED indicates the system is idle.
- **ORANGE:** Solid LED indicates a call for fan. Flashing LED indicates a purge. If a heat/cool limit is reached, the active call will stop and a solid light will turn on. Once there is a 10-degree drop from the limit, the orange LED will turn off and continue the current heat/cool call.
- **BLUE:** Solid LED indicates a call for cool. Flashing LED indicates a second stage call. Based on the stage timer, a second stage call will trigger. RED: Solid LED indicates a call for heat. A flashing LED indicates a second stage call. Based on the stage timer, a second stage call will trigger.
- HUM: Responsible for showing an active humidification status. This feature is currently unavailable and will be active in future updates.
- DEHUM: Responsible for showing an active dehumidification status. This feature is currently unavailable and will be active in future updates.

The HCM has 1 push button:
Located on the right side of the HCM is a small blue button. Holding the push button down for a duration of 10 seconds or more will trigger a factory reset for the HCM. This will also trigger the MODE LED to start flashing a WHITE light indicating an uninstalled HCM.

The right side of the HCM has 3 available RJ-11 ports to send power to each WDS. On the bottom side of the HCM you will find a 12VDC port. It is crucial that the HCM uses the supplied BLACK power supply or 12VDC equivalent. Failure to do so will result in the HCM not powering up.

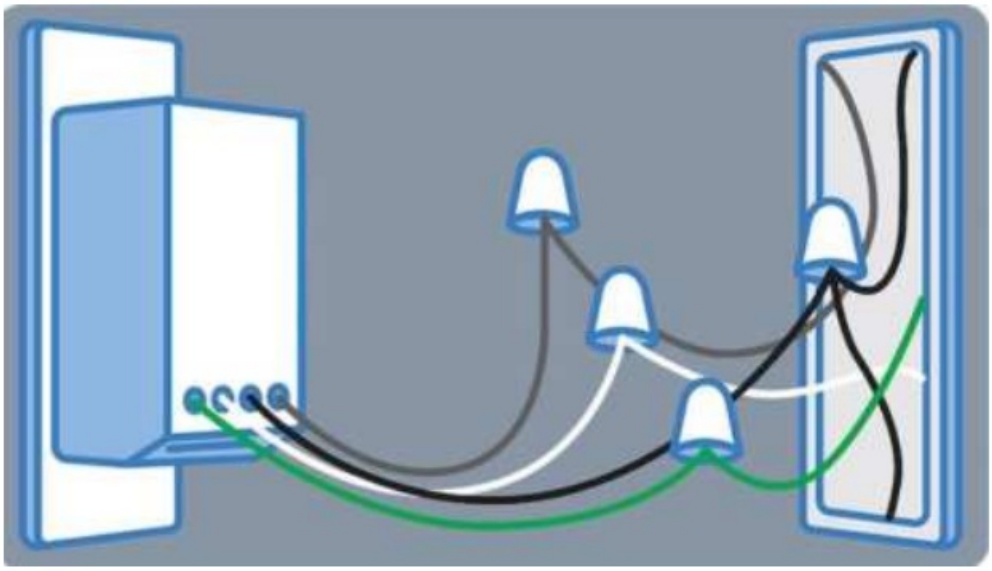
LIGHT SWITCH THERMOSTAT – LST

The LST or Light Switch Thermostat is responsible for monitoring and changing the temperature for each zone. Each LST is also capable of turning on or off the light for the specified zone.

Located on the front of the LST is the touch display capable of interacting with the temperature input. Below it is an icon of a light bulb used to turn on and off the connected light source. At the bottom, there are a variety of venting holes to read the accurate temperature and humidity of the current room. At the center of the vent holes is a slightly larger hole that has a small tactile push button behind it. Using a small pin or a paperclip, you can push the button. Pushing the button for 10 seconds will initiate a factory reset for the LST. Located on the back of the LST are the 4 wires used to connect to your power source.

Green Ground – Earth/Ground
White Neutral – Neutral
Black Line – Hot/Line
Gray Load – Load/Light

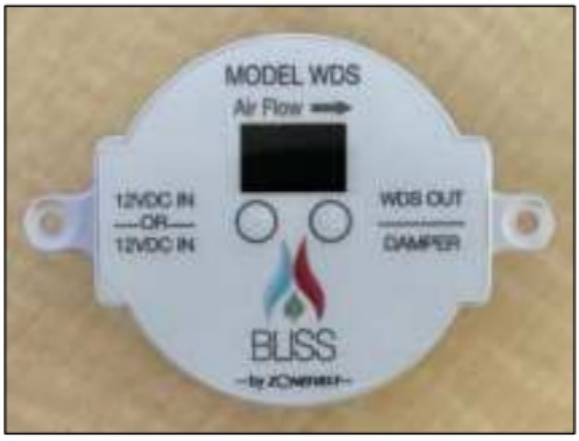
The ground, neutral and line wires are used to power the LST while the load wire is used primarily for connecting to the light source.



WIRELESS DAMPER SENSOR – WDS

The WDS or Wireless Damper Sensor is responsible for sensing the duct temperature and pressure. For every LST in the system, there is a corresponding WDS it to monitor the zone's duct parameters. The WDS connects and powers the plug-in-play dampers to modulate for open/close as well as bypassing features.

Located on the left side of the WDS is the 12VDC IN. Two ports can be used: RJ-11: Connects to the HCM or the "WDS OUT" port from a separate daisy-chained WDS. DC Port: Connects to a separate 12VDC power supply in the event you can't connect to the RJ-11 port. Only one of the two ports are allowed to be used at a time. Using both will result in a malfunction of the WDS's power.



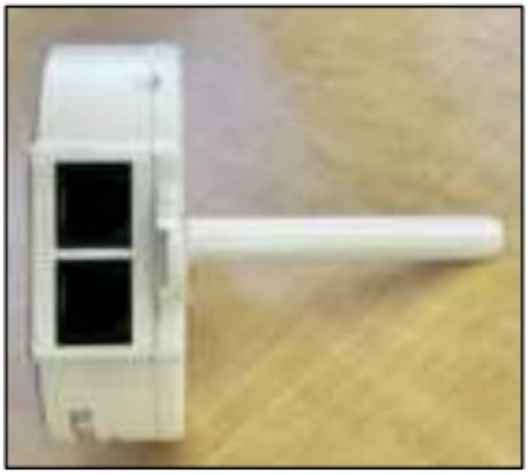
On the center of the WDS, you'll find the airflow indicator. The tube on the back has an angled cutout used to direct air into the WDS for temperature and pressure readings. The screen below showcases the designated zone.

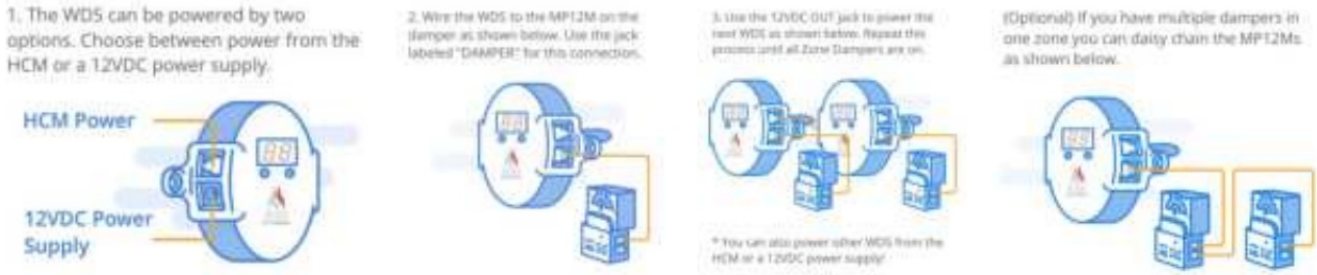
The WDS has 2 push buttons

- **Left:** During setup, this button will change the left number for zones larger than 10+. Holding the push button down for 10 seconds will factory reset the WDS. Once released, you will see a flashing dashed line on both segments.
- **Right:** During setup, this button will change the right number

Located on the right side of the WDS are two RJ-11 ports:

- **WDS OUT:** Connects to the 12VDC IN port on another WDS used to power adjacent WDS devices.
- **DAMPER:** Connects to the plugin- play dampers using a 25’ RJ-11 cable provided with the damper. Zones with multiple dampers can be daisy-chained using a single port.





QR CODES

Every IoZ display has a variety of QR codes associated with it. Each device has its own unique QR code which is tied to its unique MAC ID. For ease of install, we’ve implemented a Master QR Code which is responsible to coupling all devices into one dominant QR code for the entire system. Installs can be done by using either method.

- **ZCG:** Located on the back is a single QR code that is mapped to the MAC WiFi ID. For installs, along with the QR code you also need the UNIQUE ID, which is a 6-digit letter/number combination. The Master QR code will already include the UNIQUE ID in its code.
- **HCM:** Located on the back is a single QR code that is mapped to the IEEE ID.
- **LST:** Located on the back is a single QR code that is mapped to the IEEE ID.
- **WDS:** Located on the back and the bottom is a single QR code that is mapped to the IEEE ID.


Every display will have a Master QR code located on the front as well as individual QR codes printed on the back. For any fresh installation, you can use either method of QR codes to scan in all the devices.

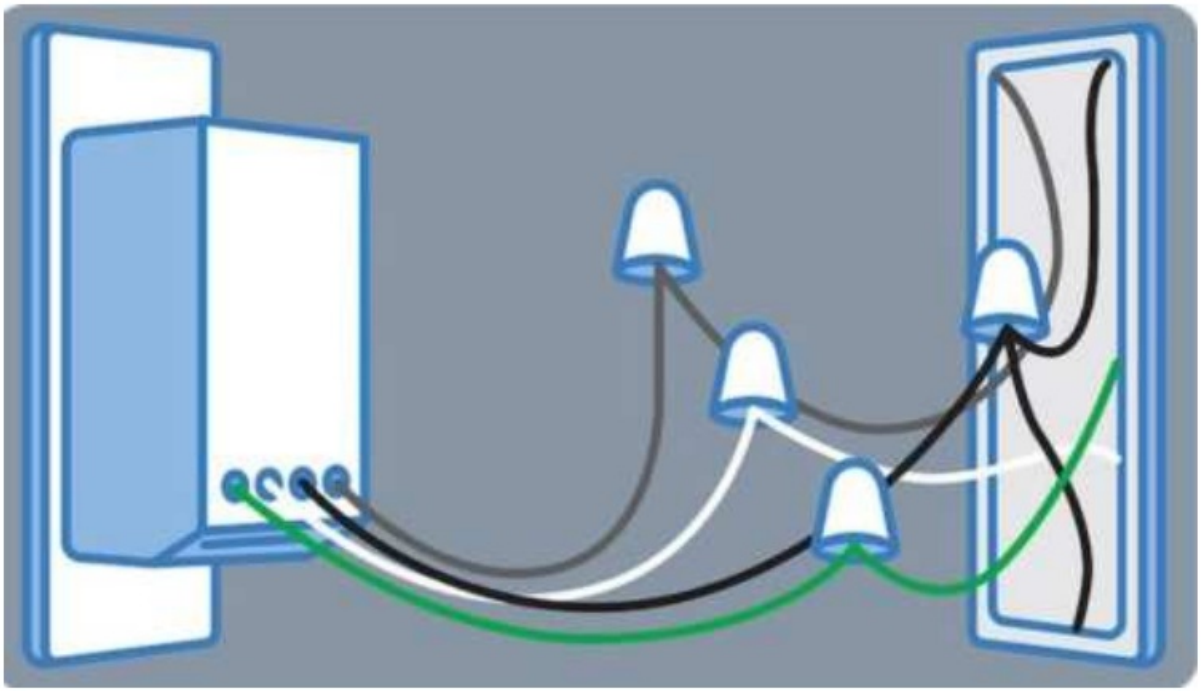
IoZ Equipment Installation

The following step-by-step procedure will walk you through how to install a system from start to finish.

Install Invis-A-Stat™/ LST

- Turn off the breaker to the room you're installing the LST into ⚠
- Remove the light switch cover and existing light switch
- Wire up the LST as seen below:

- Reinstall the light switch with the two screws & four wire nuts provided
- Repeat the process for each LST
- Once all LSTs are installed, turn the circuit breaker back on and continue



Documents / Resources

	ZoneFirst ZCG Zone Control Gateway [pdf] Installation Guide Invis-A-Stat LST, HVAC Control Module HCM, Zone Control Gateway ZCG, Wireless Damper Sensor WDS, ZCG Zone Control Gateway, ZCG, Zone Control Gateway, Control Gateway, Gateway

References

- User Manual