# SmartStuff VirtualZone®

**Description**

The VirtualZone® is a complete wireless Zone Temperature Control System. VirtualZone® consists of a central HVAC controller device, up to four remote temperature sensor devices, including motion detection, and a plurality of battery operated damper control devices, known as SmartDamper™ devices. This system essentially converts a single physical HVAC zone into, up to 4, "Virtual" temperature control zones. Each SmartSensor™ is placed in a desired temperature control area (zone).

The sensors sense motion and temperature in their respected areas and request the activation/deactivation of heating/cooling from the Controller Unit when conditions demand. The sensors also control the vents assigned to it by commanding the restriction/allowance of airflow thru them. All devices communicate with each other via Bluetooth Low Energy (BLE) connections. These connections are used to exchange instructions, configuration and status data. The system's central HVAC controller device is configured using an application written for an iOS or Android powered smart phone/device.

**Specifications**

| | |
|---|---|
| Power Requirements: | 24VAC +/-10%, 50/ 60 HZ, .2 Watts Controller Battery 3.0VDC, Sensor, 3.0VDC Damper |
| Operating Temperature Range: | 32F to 122F (0C to 50C) |
| Storage Temperature Range: | -4F to 158F (-20C to 70C) |
| Humidity Limits: | 0 to 95% (non-condensing) |
| Dimensions Enveloppe: | Controller : 6" x 3.25" x 1.25" (L x W x H) Sensor : 4.5" x 3.25" x 1.25" (L x W x H) Damper : 4.5" x 3.25" x 1.25" (L x W x H) |
| Weight : | Controller : 7 ozs. Sensor : 5 ozs. Damper : 5 ozs. |
| Area Classification: | Ordinary Location (non-Hazardous) |
| Equipment Mobility: | Fixed – Controller, Damper; Mobile - Sensor |
| Connection to Mains: | Permanent (Controller, Damper) |
| Operating Conditions: | Continuous |
| Pollution Degree: | 2 |
| Bluetooth Power in watts | .0025W |
| Type of Bluetooth | Low Energy |
| Environment | Commercial |

**Model Information**

<u>Controller</u>

SSC-ww-p-xx-yyyy
(where x,y,w = 0-9,A-Z)

       ww – Wireless Interface
          00=Bluetooth
       p – power
          0=DC, 1=AC

       xx, yyyy- SmartStuff configuration (not safety relevant)

       xx box color
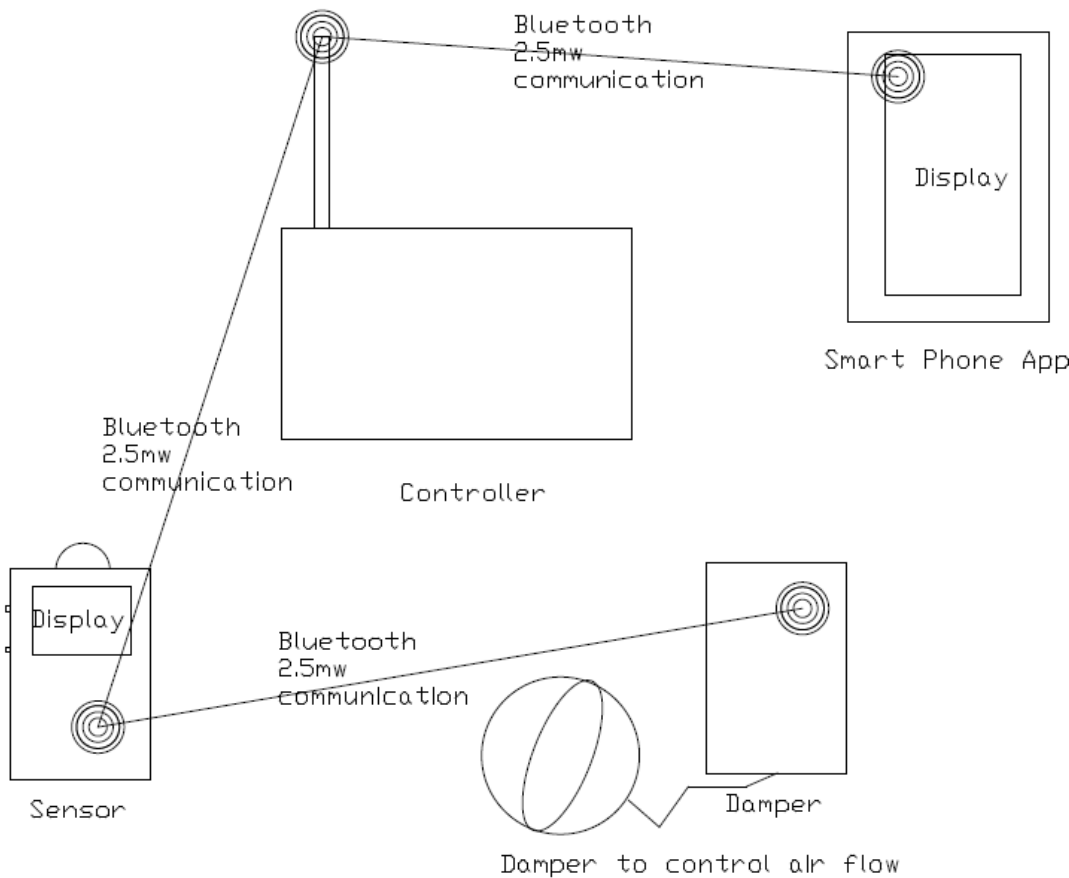       00=gray

       yyyy box shape and software revision
       0001= initial revision

<u>Sensor and Damper</u>

SSS-ww-p-xx-yyyy (Sensor)
SSD-ww-p-xx-yyyy (Damper)

# Block diagram SmartStuff Virtual Zone



Details of the inputs and outputs of the **SmartStuff Virtual Zone**
are as follows:

| Controller | | |
|---|---|---|
| **Thermostat Interface** | | |
| **Signal** | **I/O** | **Description** |
| C | Input | Thermostat Line Neutral (return) |
| R | Input | Thermostat Line Heat input – 24VAC 50/60Hz |
| R1 | Input | Thermostat Line Cool input – 24VAC 50/60Hz |
| W | Output | Thermostat Heat Relay Output – 24VAC 50/60Hz |
| W2 | Output | Thermostat $2^{nd}$ Stage Heat Relay Output – 24VAC 50/60Hz |
| Y | Output | Thermostat Cool Relay Output – 24VAC 50/60Hz |
| Y2 | Output | Thermostat $2^{nd}$ Stage Cool Relay Output – 24VAC 50/60Hz |
| G | Output | Thermostat Fan Relay Output – 24VAC 50/60Hz |
| B | Output | Thermostat Heat Pump Change Relay Output – 24VAC 50/60Hz |
| O | Output | Thermostat Heat Pump Change Relay Output – 24VAC 50/60Hz |

| SmartDamper | | |
|---|---|---|
| **Motor Interface** | | |
| **Signal** | **I/O** | **Description** |
| M1+ | Output | Motor 1 Plus Connection |
| M1- | Output | Motor 1 Minus Connection |
| M2+ | Output | Motor 2 Plus Connection |
| M2- | Output | Motor 2 Minus Connection |