

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

Controller

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

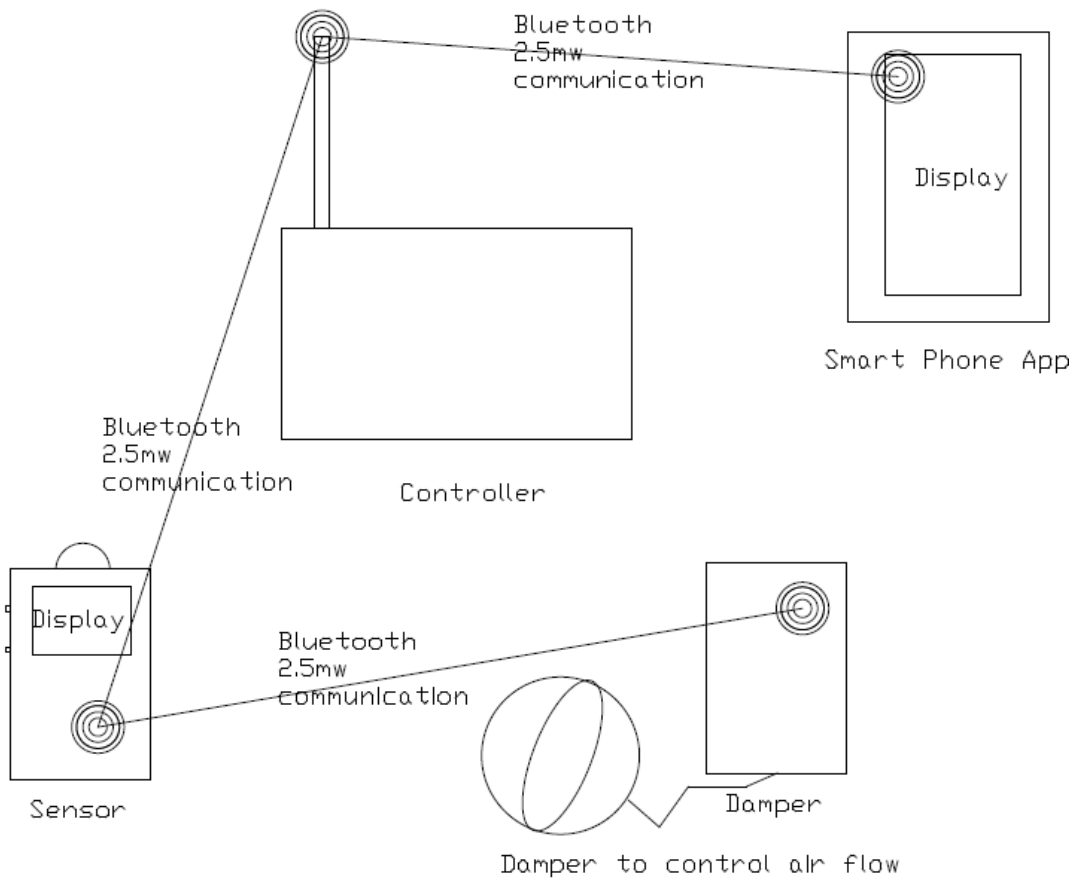
0001= initial revision

Sensor and Damper

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