***Guide Specifications***

*Delta Controls O3 Edge*

*O3 Edge*

*2021 version*

(The following product is to be inserted into the master spec in the products section of building automation specification)

2.5 O3 Integrated O3 Edge

1. Single, ceiling-mounted max height of 15ft, UL 916 Listed, 24VDC, 1W typical, 8W max, Class 2 device with removable screw-type terminal connectors. Complies with CE, EAC, and FCC/IC.
2. Single sensory HUB shall include the following sensors:

###### 1. Temperature Sensing

###### Composite temperature value ± 0.5°C (± 1.0°F) typical with calibration

###### Digital temperature sensor ± 0.5°C (± 1.0°F)

###### Infrared temperature sensor ± 1.0°C (± 1.8°F) typical +/- 1.0°C (1.8°F)

###### 2. One Relative Humidity +/- 3% from 20% to 80% RH @ 15°C to 30°C (59°F to 86°F)

###### 3. One Passive Infrared (PIR) Motion Sensor

###### 9.1 m (30 ft) diameter @ 4.6 m (15 ft) mounting height

###### 5.5 m (18 ft) diameter @ 2.4 m (8 ft) Mounting height

###### 4. Audio Sensor for acoustic occupancy detection

###### 5. Light Sensor range shall be ± (6 + 5% reading) lx

###### 6. LED Ring fully color articulated with 12 RGB LEDs

7. Audio level sensors for acoustic occupancy detection

8. 1.0-watt monospeaker for tones and audio output

1. O3 shall support the following communication:
2. Bluetooth Low Energy Beacon (Version 5.0), will broadcast identifier to Bluetooth enabled smartphones. Bluetooth 2-way communication shall support setup of the O3 from Android or iOS devices directly. BLE API must be available for custom app development.
3. MQTT. Available internal MQTT broker.
4. BACnet/IP and BACnet/Ethernet. BACnet Protocol Revision 18 or later. O3 to include dual-port Ethernet connections with failsafe Ethernet pass-through to support daisy chain topology.
5. Provide the ability to lock NFC Read/Writes after configuration.
6. Input/Output support: HUB to Up to 2 inputs (16-bit), software configurable for the following types: 0–5 VDC 0–10 VDC 10K thermistor Dry contact (using 10K thermistor software setting) 4–20 mA (using external 250 Ω resistor on 0–5 V setting) Up to 2 outputs (12-bit), software configurable for the following types: 0–10 V @ 20 mA max (sourcing) 1–10 V @ 10 mA max (sinking) for hardware rev 2.7 and later
7. Node-RED modules available through Professional Development Services (PDS)
8. Acceptable sensor array O3:
9. Delta Controls O3 Edge
10. Hardware
	1. NFC: Supports Android and iOS for factory reset ONLY.
	2. Dual Port Ethernet: Star and daisy chain configurations with failsafe Ethernet pass-R
		1. Loss of power to any one unit in the daisy chain will not take the other units off-line.
		2. The daisy chain will support units with up to 100 meters between them. In a power failure scenario, the distance between units is reduced to 15m for each bypassed hub.
	3. Bluetooth 5.0: BLE Beacon and Bi-directional communication
	4. Power: 24 VDC, External PoE splitter can be used
11. Security
	1. Bluetooth Low Energy (BLE)
		1. Customizable passcode
	2. MQTT Broker
		1. Password set for configuration changes through MQTT

2.6 iOS and Android O3 Edge Setup

1. Network parameters, communication options, and all operating parameters will be adjustable with this tool without the use of a third-party software program or Building Automation System.

2.7 Embedded Analytics

1. Metrics must be calculated automatically. No additional setup shall be required.
2. Metrics that shall be reported:
	1. Report minimum, maximum, and mean values of temperature, humidity, light level, and sound level, for the past hour
	2. Report the percent of the past hour that the room was occupied
3. These metrics shall be reported through BACnet objects as well as MQTT topics