

SMART HEAT. COOL COSTS.



orbismesh[®]

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Orbis Mesh Technologies Inc., www.orbismesh.com utilizes RF Mesh networks to eliminate costly outdoor cabling of all types, provide a redundant and on door self configuring mesh network that enables telemetry and data to be relayed back to the control center and do so using commercially available unlicensed radio spectrum technology.

All of which means that it is now possible to smartly and sustainably manage your infrastructure using the Internet of Things (IoT) in a way that was not efficient, effective or cost affordable before.

We expect that the industrial application of the Orbis Wireless Sensor and Smart Communication System will support the UN's Sustainable Development Goal (SDG) <http://www.undp.org/content/undp/en/home/sustainable-development-goals.html> by improving affordable and clean energy, facilitating sustainable cities, and taking action on climate change.

Why Use Orbis For Your HVAC System

- 1) **Lower cost than cables and other wireless technologies.**
- 2) **Manage and monitor temperature, motor RPM, and use remote shutdown from a single point.**
- 3) **Secure, encrypted communication.**
- 4) **Seamless integration with current software systems or standalone operation.**
- 5) **High reliability. Low maintenance.**

RF Mesh

With our mesh network, we are using Bluetooth RF technology to create a network where devices receive and relay (in effect re-transmit) incoming data. The effect is that nodes work in conjunction with each other.

Like a ripple on a pond, messages propagate through the mesh network, in a secure, encrypted format, with each node relaying the data of its neighbours.

The result is a vast robust, self-healing network of miniature sensors and controllers without any single point of failure.



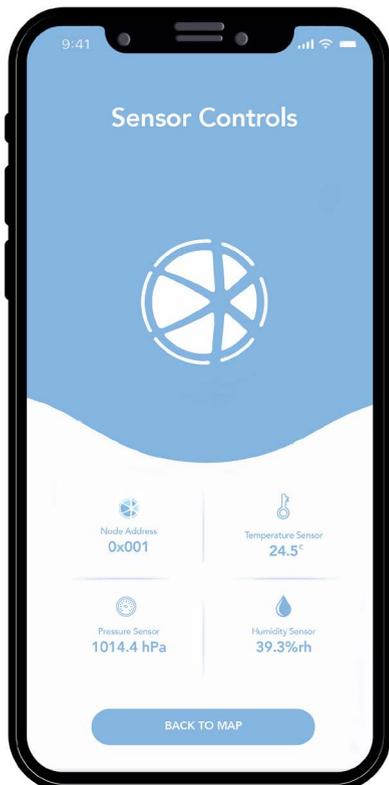
The Wireless Node

The Orbis Wireless Node / Sensor (aka the "Puck") is a durable, lightweight, waterproof, self-contained unit. Capable of operating at either 915 MHz or 2.4 GHz it has a typical range of 40-50 meters unobstructed outdoors @ 2.4 GHz and 1 km at 915 MHz.

The unit is currently battery powered and can be mounted on or integrated into existing machinery. It has low power consumption for long battery life.

The first release is equipped with built in temperature, humidity and pressure sensors. The sensors have the following operational range:

Humidity: 0 – 100%
Pressure: 300 – 1100 hPa
Temperature: -40 - + 85 C



The Software Application

Our mobile app provides a comprehensive overview with detailed readings of each individual sensors (as shown on the left) monitoring the performance of each sensor.

For a maintenance team, it would be possible from a smart phone app to see the performance of all the machinery in a network, including failures, heat profile and motor RPM performance.

In our next release we will provide control signals to interface to alarm systems providing an automatic alert if any of the machinery fall outside of acceptable performance parameters, as well as the ability to reprogram equipment from a central point.

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