

Wireless Pneumatic Thermostat

What is this Technology?

The Wireless Pneumatic Thermostat provides standard pneumatic thermostats with networked Direct Digital Control (DDC) functionality. Wireless Pneumatic Thermostats can operate as a stand-alone system or integrate with an existing Building Automation System.

Why is GSA Interested?

Heating and cooling equipment represents roughly 35% of total energy consumed by GSA buildings. A preliminary assessment found that approximately 40% of GSA facilities still incorporate some pneumatic thermostats. This technology promises to cost-effectively deliver energy and costs savings by improving the controllability of these thermostats.



ENERGY EFFICIENCY Transitioning from pneumatic to DDC thermostats has been shown to reduce HVAC energy use by between 18% and 30%.



COST EFFECTIVENESS The Wireless Pneumatic Thermostat is designed to be cost effective when compared against a retrofit that will require invasive hard-wiring, especially in cases where asbestos is an issue. The expected payback is less than 3 years. In comparison, a wired whole-building DDC system has a typical payback of 8 years.



OPERATIONS & MAINTENANCE The Wireless Pneumatic Thermostat is noninvasive, can be installed in less than 20 minutes, and does not disrupt occupants.



DEPLOYMENT POTENTIAL This technology is potentially applicable to any building that uses pneumatic thermostats. Because Wireless Pneumatic Thermostats are easily deployed, building operators can retrofit thermostats in selected spaces, as opposed to all thermostats in the building. This assessment will identify the specific criteria, applications and circumstances needed to prioritize its potential for deployment by GSA, should its performance prove out.

Adapted from a report by the National Renewable Energy Laboratory. The Green Proving Ground program, in association with a federal laboratory, is subjecting the wireless pneumatic thermostat to real-world measurement and verification. Findings from that investigation will be available in late 2013 or early 2014.