



# US POSTAL SERVICE CASE STUDY

## INTERNET COMMUNICATING THERMOSTATS



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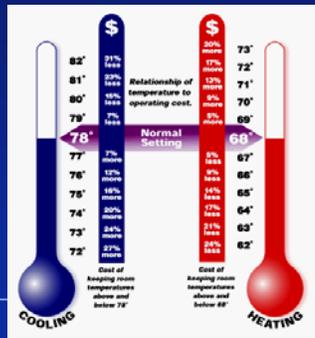
## Internet Communicating Thermostats

### Overview

- **Thermostat that can send and receive settings / status over the Internet**
  - *Wired & installed like conventional thermostats*
  - *Operates with or without communication*
  - *Remote access to thermostats via Internet connections, open system protocols*
  - *Easy access for local user override*

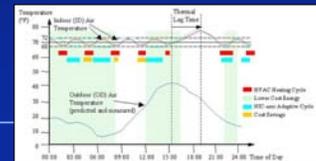


## Thermostat setpoint affects energy savings



## Information that can be collected remotely

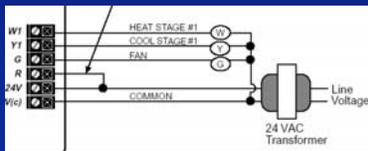
- *Operating time of each unit*
- *Out of comfort-range alert and time*
- *Daily, weekly, monthly run hours*
  - *During occupied and unoccupied hours*
- *Local over-ride times & temperatures*



## Internet Communicating Thermostat

**Installs and works like a conventional thermostat**

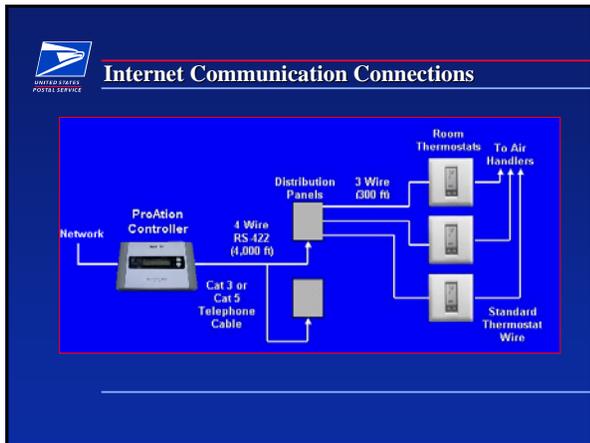
- *no "learning curve"*
- *intuitive without training*



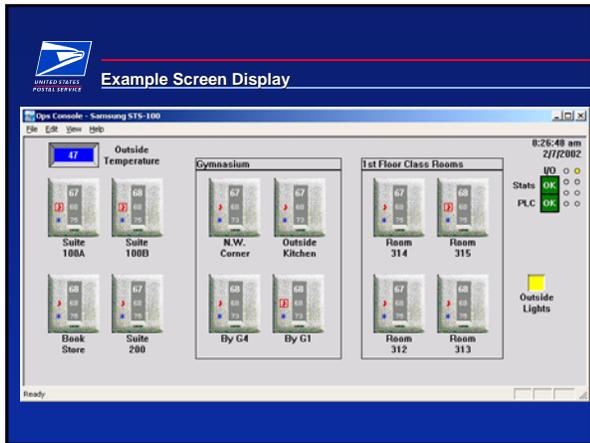
## Internet Communicating Thermostats

### Internet Connections

- *Controller communicates using CAT-3 or CAT-5 via standard interface*
- *Distribution panels connected to computer interface*
- *Each distribution panel connects up to 8 thermostats*
- *Each controller unit connects up to 4 panels (32 stats)*
- *Could also control lighting relays and other equipment on same schedule*



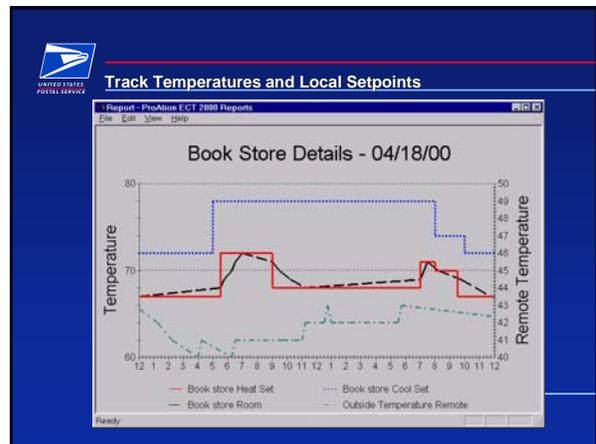
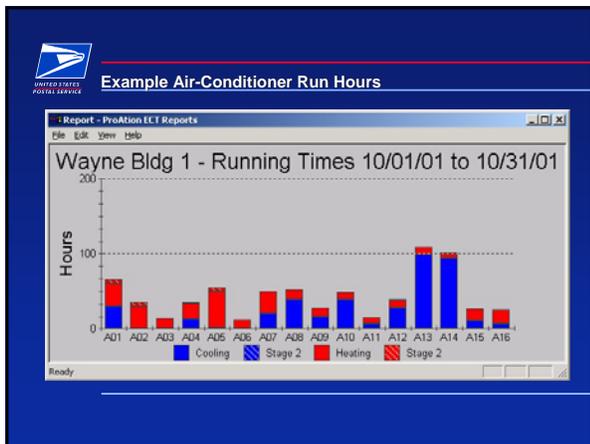
- ### Adjustments that can be made remotely
- Temperature set points
  - Schedule times, days, holiday/weekend
  - Local set point adjustment limits
  - Heating, Cooling, or Auto
  - Fan cycle or continuous
- 



The screenshot shows the 'N.W. Corner' configuration window in the ProAction ECT 2000 software. The window is divided into several tabs: Settings, Heat Schedule, Cool Schedule, and Fan Schedule.
 

- Heat Set Point:** A slider is set to 68°F.
- Cool Set Point:** A slider is set to 73°F.
- Mode:** Radio buttons for Off, Heat, Cool, Auto, and Empty. 'Auto' is selected.
- Schedule Mode:** Radio buttons for Scheduled, Comfort, Economy, and Unoccupied. 'Scheduled' is selected.
- Use Which Schedule?:** Radio buttons for Use Individual Schedule and Use Master Schedule. 'Use Master Schedule' is selected.
- Master Schedule:** A dropdown menu is set to 'Gymnasium Standard'.
- Other options:** 'User hold' and 'Copy Master Schedule' buttons.

 The window includes 'OK' and 'Cancel' buttons at the bottom.





## Internet Communicating Thermostats

### Case Study

#### Five facilities

- Installed cost per facility average \$2000
- Estimated savings: \$5,800 ~ \$8,400 per year
- Payback period: 1.5 to 2 years
- Installed by in-house technicians
- System is fairly simple and user friendly



## Case Study



## Internet Communicating Thermostats

### Evaluations-Pros/Cons

- ❑ Power outages knocking out system & clock settings
- ❑ Several far away sites can be controlled very easily from one location
- ❑ Less costly to install than a full DDC\* system
- ❑ Only 2 out of 5 sites actually saved energy
  - ✓ US Postal service unique

\* DDC – Direct Digital Control



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Thank You!