



*"Installation of DCV has allowed Danforth to further improve our energy savings through the use of Honeywell Controls and **New York Energy \$mart**<sup>SM</sup> Incentives. The installation also allows us to showcase our facility to customers as a sales tool."*

*Jack Betz, Vice President,  
JW Danforth*

## Demand Control Ventilation (DCV)

Buffalo Region, New York

### Background

JW Danforth a heating, ventilation and air conditioning (HVAC) company located in Tonawanda, New York, contacted the New York State Energy Research and Development Authority (NYSERDA) to help further reduce energy use in its facility under the **New York Energy \$mart**<sup>SM</sup> Unitary HVAC Program. The building already featured high-efficiency roof top units and ENERGY STAR<sup>®</sup> qualified lighting, and was a prime candidate for additional energy savings through demand control ventilation (DCV) since it has variable occupancy rates throughout the day, ranging between 40 and 100 people at any given time.

### Technology

DCV saves energy by automatically adjusting building ventilation rates in real-time based on occupancy. DCV sensors measure the carbon dioxide levels in the air to establish the number of people in the space. They then adjust the air conditioner's economizer so that the air flow either increases or decreases to match the per person ventilation requirements as established by code. Typically, economizers provide air flow as if a space was at maximum occupancy, which results in over-ventilation. By setting the ventilation rates based on actual occupancy, building occupants receive improved air quality while the need to heat or cool excessive amounts of outside air is reduced, thereby saving significant amounts of energy.

### Results

JW Danforth installed six DCV sensors throughout its office space. Each of the sensors monitors just over 4,000-square-feet, and tie to six roof top units with a total of 96 tons of cooling capacity. This installation was completed in early 2005 and is expected to save over 7,000 kWh of electricity and 2,600 therms of gas per year – translating to an annual dollar savings of approximately \$3,500.

### New York Energy \$mart<sup>SM</sup>

All **New York Energy \$mart**<sup>SM</sup> programs are funded by a System Benefits Charge (SBC) paid by electric distribution customers of Central Hudson, Con Edison, NYSEG, Niagara Mohawk, Orange and Rockland, and Rochester Gas and Electric. NYSERDA, a public benefit corporation established by law in 1975, administers SBC funds and programs under an agreement with the Public Service Commission. **New York Energy \$mart**<sup>SM</sup> programs are designed to lower electricity costs by encouraging energy efficiency as the State's electric utilities move to competition. The programs are available to electric distribution customers (residential, commercial, institutional, and industrial) who pay into the SBC.

