



# *PowerSentry™* Energy Management



# Air-Conditioning Economizers

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**Residential:** ***PowerSentri™-RA***

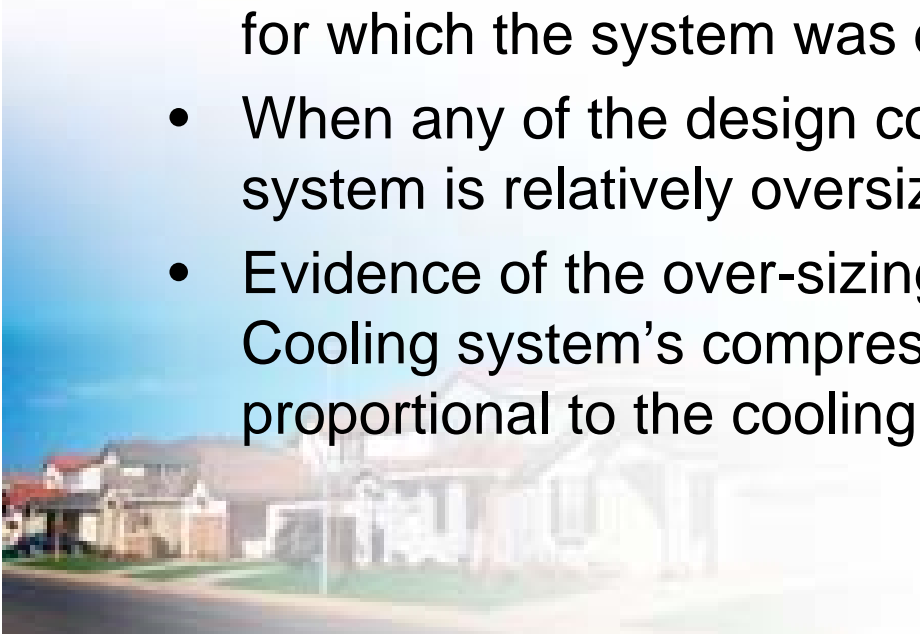
**Commercial:** ***PowerSentri™-CA***



# Cooling System Basics

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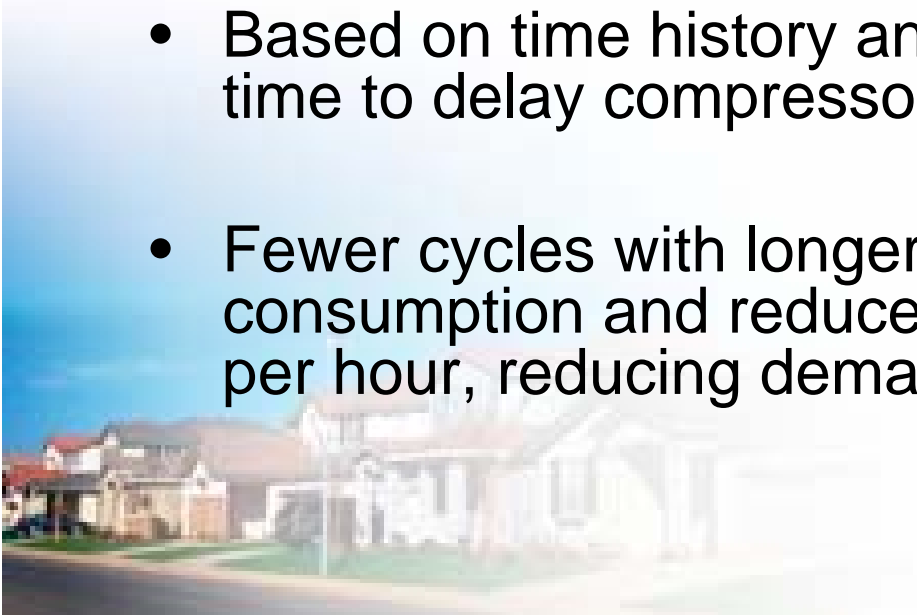
- Sizing of Refrigeration/Air-Conditioning (Cooling) systems is based upon the thermal mass of the volume to be cooled, the required cooling temperature, and the maximum expected ambient temperatures.
- The only time the Cooling system is properly matched to the cooling load is when all of the above conditions are the value for which the system was designed.
- When any of the design conditions are not met, the Cooling system is relatively oversized and thus less efficient.
- Evidence of the over-sizing is the on and off cycling of the Cooling system's compressor. The cycling rate is directly proportional to the cooling load.



# *How they Work*

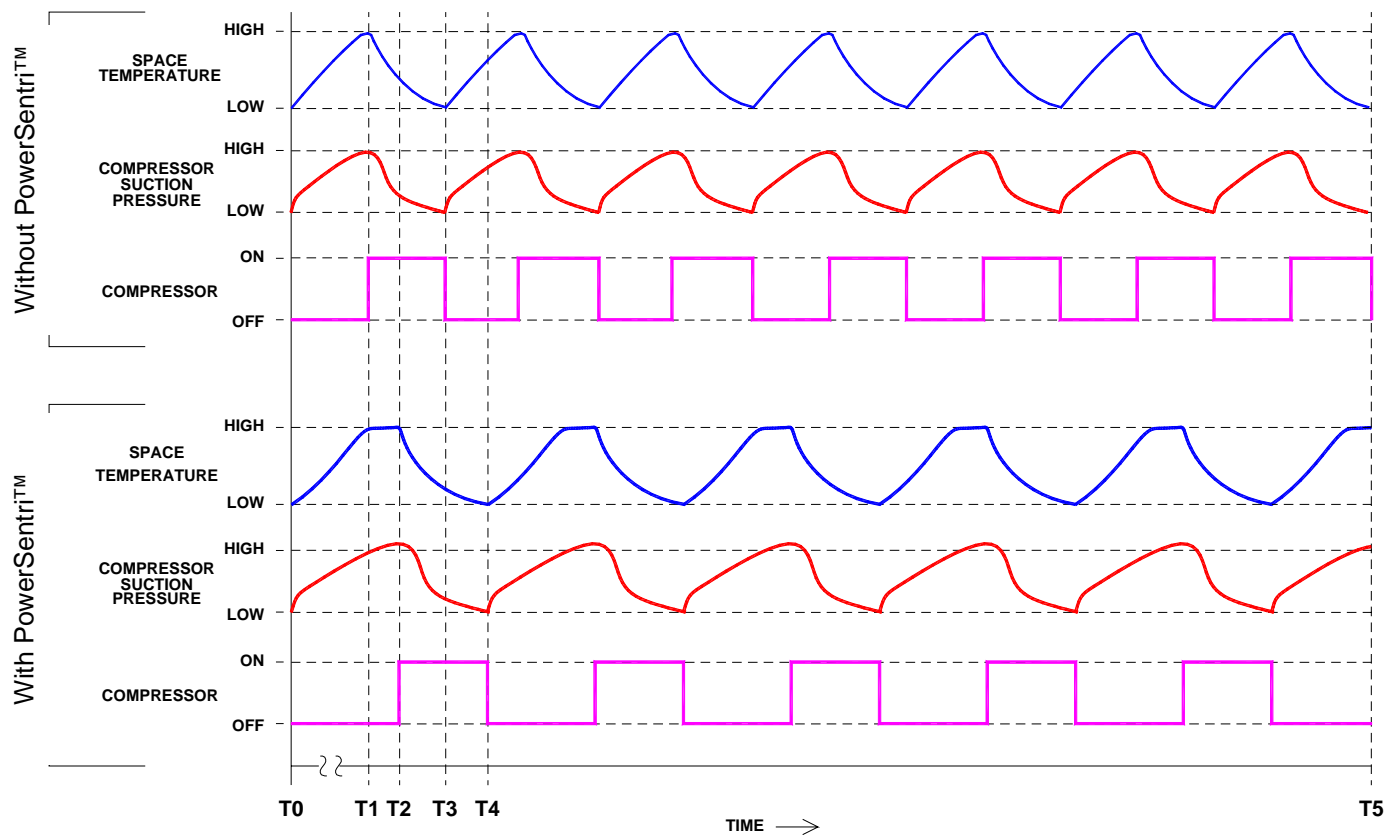
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- Microprocessor unit monitors the on and off times of the compressor
- Microprocessor detects changes in system load through time history analysis of recent compressor run cycles
- Based on time history analysis, an optimal hold-off time to delay compressor start is determined
- Fewer cycles with longer run times reduce energy consumption and reduce the number of startup loads per hour, reducing demand charges.



# Reduced Energy Consumption

ILLUSTRATION PORTRAYING TYPICAL REFRIGERATION SYSTEM RESPONSES TO AIR-TEMPERATURE OR SUCTION-LINE PRESSURE CONTROL



# Field Results

Central AC- 5 tons or less

Average Savings 13.5%

Manufacturer / Brand	Rated Tons	Application	Validation Date	PowerSentri Model	Savings
Lennox	5	Office Space	Aug-05	CA	13.79%
American Standard	4	Maint. Facility	Jun-04	CA	11.76%
American Standard	4	Maint. Facility	Jun-04	CA	11.97%
Trane	3	Condo	Aug-04	RA	12.10%
Trane	5	Conv. Store	Jul-03	CA	19.08%
Trane	4	Gov. Office	Aug-04	CA	12.99%
Carrier	4	Drug Store	Oct-03	CA	10.74%
Rheem	5	Super Market	Nov-03	CA	24.46%
Carrier	3	Office Space	Aug-06	RA	9.60%
AAON	15	Retail store	Aug-06	CA	8.50%



# Field Results

## Central AC- 5 to 10 tons

**Average Savings 12.3%**

Manufacturer / Brand	Rated Tons	Application	Validation Date	PowerSentri Model	Savings
Trane	10	Comp. Room	Sep-04	CA	11.03%
Lennox	10	Rest, Dinnig	Nov-03	CA	12.63%
York	8	Conv. Store	Oct-03	CA	12.54%
Trane	7.5	Gov. Office	Aug-04	CA	13.73%
Carrier	10	Drug Store	Oct-03	CA	10.39%
Carrier	10	Health Care	Sep-03	CA	13.75%

## Central AC- 10 to 25 tons

**Average Savings 15.8%**

Manufacturer / Brand	Rated Tons	Application	Validation Date	PowerSentri Model	Savings
York	12	Res. Dining	Jun-04	CA	19.40%
Carrier	20	Dept. store	Jul-03	CA	13.12%
Carrier	12	Drug Store	Oct-03	CA	10.29%
Carrier	12	Drug Store	Oct-03	CA	11.29%
Aaon	15	Retail Dept Store	Oct-06	CA	13.12%
Aaon	15	Warehouse	Oct-06	CA	16.40%
Heil	15	Hotel	Nov-06	CA	27.10%



# Field Results

Central AC – 25 Tons +

Average Savings 15.8%

Manufacturer / Brand	Rated Tons	Application	Validation Date	PowerSentri Model	Savings
Carrier	50	Office Space	Jul-04	CA	13.69%
Carrier	80	Cafeteria	Sep-04	CA	13.84%
Carrier	30	Pub. Library	Jul-02	CA	13.46%
Carrier	30	Pub. Library	Jul-02	CA	18.21%
Carrier	30	Office Space	Aug-03	CA	14.73%

Additionally, product performance has been validated by performance testing at internationally recognized research facilities including Brookhaven National Laboratories, NYSERDA, Brooklyn Union (KeySpan), and ConEd Solutions. Our Products are also UL and ETL listed as meeting the highest safety standards.



# *BENEFITS*

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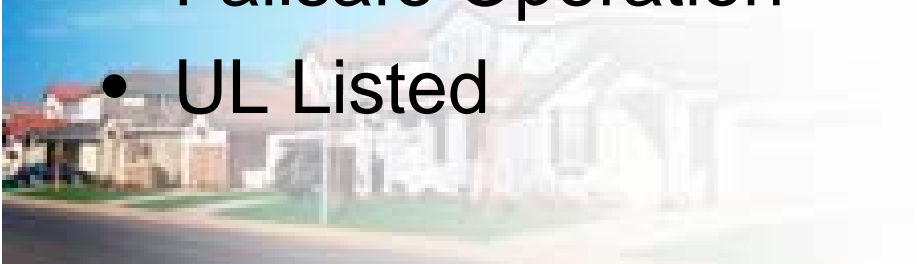
- Reduces Compressor Electric Consumption 10 to 20%
- Short Payback Period - Typically 6 to 12 Months
- Protects Compressor Against Momentary Power Outages
- No Programming or Maintenance Required
- Longer Compressor Life
- Reduces System Maintenance Requirements



# *FEATURES*

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- Low Installed Cost
- State of the Art Microprocessor Controller
- Indicator Lights Show Operating Mode
- Simple Installation – Takes 15 Minutes
- No Programming or Follow-up Visits Required
- Anti Short-Cycling Control Integrated Into Unit
- Failsafe Operation
- UL Listed



# Contact US

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