



Commercial Air Conditioning Energy Conservation Pilot Program

Tests Conducted On
Underlying Technology For

PowerSenti™-CA

Date: 09/21/04

CONFIDENTIAL

CHELSEA PIERS PILOT REPORT SUMMARY

The attached technical report summarizes the Energy Saving Performance of the *PowerSentry™-CA* energy saving control which was installed on an electric powered, 10 Ton packaged unit manufactured by Trane Comfort Systems. The *PowerSentry™* unit was installed on the unit that provides space conditioning for the "electronics room" on Pier 60 at Chelsea Piers in Manhattan, New York and the validation data was collected from August 20, 2004 to September 8th, 2004. The test data was collected using "alternating day" methodology which is further described later in this report.

The Air Conditioning system operates "24x7" for approximately 9 to 10 months per year. The test data in this report reflects a reduction in run time and consistent space temperatures in the area served by this packaged AC system. With the *PowerSentry™* control installed, the compressor achieved a reduction in total run time of 11.03%.

This "pilot study" clearly shows the *PowerSentry™* control delivers above the minimum guaranteed savings of 10% and, by significantly reducing total compressor run time, should provide the additional benefit of extending the operational life of the compressor.



712 US Hwy One
Suite 200
North Palm Beach, FL 33408

Test Report

Report No. 12137
Date: 9/21/2004

Customer
Global Solutions Pier 60, West Street New York, NY

Test Site Location
SAME

Test Type:	<input type="checkbox"/> HEATING	<input checked="" type="checkbox"/> AIR CONDITIONING	<input type="checkbox"/> REFRIGERATION	<input type="checkbox"/> OTHER					
Product Tested:	<input type="checkbox"/> HWR	<input type="checkbox"/> LTH	<input type="checkbox"/> LTC	<input type="checkbox"/> CH2O	<input type="checkbox"/> CST	<input type="checkbox"/> RA	<input checked="" type="checkbox"/> CA	<input type="checkbox"/> REF	<input type="checkbox"/> OTHER

Type of Equipment
Manufacturer: Trane Model: TTA120B300LA S/N: 3145P73AD Cooling Capacity: 10 Ton (Two 5 Ton Compressors) Application: AC for Electronics Room Volt, Amps, Ph: 206,15.9 A, 3 Phase Equipment Location: Roof

Test Dates
Start Date: 8/20/2004
End Date: 9/8/2004
===== No. of Days in Test: 20

COMPRESSOR RUN-TIME
PowerSentri™ ON-DAYS: 391:15:28 <input checked="" type="checkbox"/> in HRS.
PowerSentri™ OFF-DAYS: 439:44:25 <input type="checkbox"/> in MIN.
RUN-TIME was reduced by: 11.03%

USAGE FACTOR
PowerSentri™ ON-DAYS: 82%
PowerSentri™ OFF-DAYS: 92%

COOLING DEGREE DAYS (for test period)*
PowerSentri™ ON-DAYS: 47
PowerSentri™ OFF-DAYS: 49
TOTAL DEGREE-DAYS: 96
It was 3.42% Cooler on the ON-Days

SOLAR LOAD COMPENSATION
PowerSentri™ ON-DAYS: 99
PowerSentri™ OFF-DAYS: 90
It was 9.51% Sunnier on the ON-Days

Adj. Savings = 11.03%

Comments: Effects of solar load and outdoor air temperature fluctuations negated each other. As such, there was no need to compensate for their influence. The run-times for both compressors were combined and treated as one unit for analysis purposes. The usage factors for compressors were above the normal levels of between 40%-80%. Temperature maintenance within the space was well within normal limits of +-1 degree F.