



# Products Marketing Corporation

"ENERCON & Compressed Air SOLUTION Provider"

Since 1980



the INTELLIGENT choice...for your complete fixed speed motor SOLUTION

## SAE Products Marketing Corp SAE's OFFICE CONDITION DURING TESTING DURATION April 1 and 2, 2008

	Without AES	With AES
No. of persons inside	19	21
No. of computers in use	14	13
No. of 40W lights in use plus 10W EM ballast	19	23
No. of electric fans in use	3	1
Blower Setting Mode	Low	High
Thermostat Setting	24°C	24°C
External: Ambient Temperature	33°C - 35°C	33°C - 35°C
Specs & Brand of 7.5 Ton AirCon, 220/3/60	14 yr. old Koppel, but with new	Hermetic comp. 6 months old.

### TESTING PROCEDURES:

- 1) The AES was installed according to the manufacturer's instruction.
- 2) The temperature set point was 24°C.
- 3) Turning ON of the air conditioning unit was delayed for 3 minutes to determine the in-rush (starting) current.
- 4) The air conditioning unit was in operation throughout the test.
- 5) The energy consumption was recorded for 210 minutes.
- 6) Power Data Logger used: "Circutor" Model AR5L & Laptop Computer.

### NUMBER OF TESTS CONDUCTED:

- I. Air conditioning unit with AES on April 2, 2008
- II. Air conditioning unit without AES on April 1, 2008

### TEST RESULTS:

Figure 1:

	Time Start	Time End	KwHr Consumption
WITH AES	10:20 am	13:50 pm	20.126
WITHOUT AES	10:20 am	13:50 pm	28.441

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#### POWERBOSS

COOPER COMPRESSION

COMPAIR SCREW & VANE

CHART (MVE) CRYOGENICS

G.D. HOFFMAN BLOWERS

FILTRATION PRODUCTS

SERVICES & INSTALLATION

**Figure 2:**

	With AES	Without AES
Length of test	210 minutes	210 minutes
No. of stops while in use	6	1
No. of starts while in use	6	None
Length of each stop	9 – 10 minutes	N/A
Total minutes of stop	59 minutes	N/A

**COMPUTATION ON PERCENTAGE SAVINGS:**

**Formula:**

$$\% \text{ Savings} = \frac{\text{KwHr consumption without AES} - \text{KwHr consumption with AES}}{\text{KwHr consumption without AES}} \times 100\%$$

$$\% \text{ Savings} = \frac{28.441 \text{ KwHr} - 20.126 \text{ KwHr}}{28.441 \text{ KwHr}} \times 100\%$$

**% Savings = 29.235 %**

**DISCUSSIONS AND CONCLUSION:**

- 1) From the test results conducted on the air conditioning unit, it shows that the power consumption of the air conditioner when working with an AES, is **29.235%** less than that without an AES.
- 2) When the air conditioner is working with the AES, there are 6 off-loadings observed ranging from **9 to 10 minutes per stop**, while there no unloading observed when air-con is without the AES.
- 3) There is no observed difference in the room temperature when aircon is with and without AES.
- 4) There is no significant change in the in-rush current recorded in the Circutor AR5L power data logger.
- 5) The total area where Koppel is working on is **146 square meters**. Please note that additional **23 square meters** being slightly cooled via use of an electric fan with 16” blade diameter. In spite of this, the air-con unloaded 6 times when with AES.