



## Technical Bulletin No 5 - Energy Savers For Air Conditioners



### *Green Company Rating System*

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*Air conditioning is one of the highest energy consumers in the residential and industrial sectors. Many advancements in refrigeration & air conditioning took place in the past few years giving birth to high Energy Efficiency Ratio (EER) ACs but still the Air conditioner is not customized for each climate zone separately. Hence a common setting for the hottest climate zone is getting employed in all the Air Conditioners.*

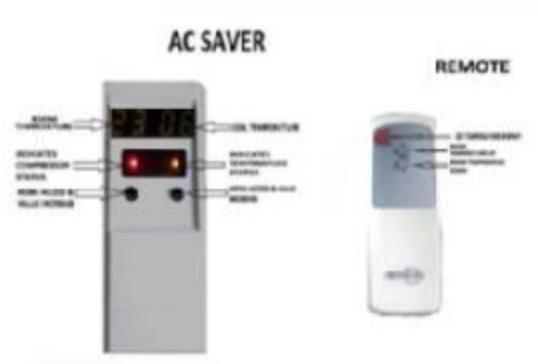
Since air conditioners are not designed for different climatic zones. When the set temperature is achieved, the compressor continues to run for an additional fixed period say 6-8 minutes known as

the overcooling period which is required only for few hours in a day in peak summer but it is over-utilized because of the balance of time. This is the area where closed-loop algorithm-based technology comes in to picture, where the compressor run cycle is optimized as per the geographical climatic conditions with the help of dual sensors.



1 - AC Energy Savers

### How it Works...



- AC energy savers are simple dual-sensor based closed-loop microprocessor controlled units.

- It equipped with a room temperature sensor and cooling coil temperature sensor through which the feedbacks were collected. This enables the energy saver to adapt to change in the ambient conditions automatically & saves electricity.
- It continuously measures room, Coil, and ambient temperature and by using multiple algorithms, maintains a precise set temperature while optimizing the compressor run time to save electricity.

There is a provision for programming different settings like required set temperature, cooling coil temperature, and compressor off delay timing. This is a compact device wherein the integration with the existing ACs is simple.

## Suitability



*2 - Works with most types of AC's*

- **These devices can be employed to different types of AC's like packaged, split, centralized ACs up to 20TR.**
- **This doesn't work with VRV air conditioner systems.**
- **It is observed that the energy savings potential will be much effective for those air conditioning units which are operating for long-running hours than the intermittent operating ones. (Particularly the ACs used in the industries like drive panel room, laboratory, etc)**

## Benefits



### ENERGY SAVING

- Detects ambient temperature and automatically maintains the precise set temperature irrespective of ambient seasonal changes
- Can be connected to existing AC
- Optimize the compressor run-time thereby saves electricity
- Converts 2 star to 4 star AC
- Extend the compressor life
- A simple device with a remote and electronic display

## Saving Potential



- *As per the supplier, the energy saver cuts your electricity bill up to 35 % with a payback of 4-6 months. But it depends on the type of air conditioner, set temperature, etc.,*

## Case study 1 (TATA Communication Ltd)



Installed on a 1.5 Ton split AC which was running almost 24 hrs/day. Power consumption without energy saver was found as 32.5 kWh and with energy saver was found to be 23.3 kWh. There was no variation observed in room temperature in both cases. Nearly 28% **energy savings with energy saver** was observed at an attractive payback period of less than 4 months.

## Case study - 2

**AIRTRON AC SAVER VALIDATIONS - THE SET TEMP REMAINED THE SAME WHILE SAVINGS WAS ACHIEVED.**

We are pleased to attached herewith a partial list of validations for your ready reference.

SL. NO.	NAME OF THE COMPANY	COUNTRY	AC TYPE	SAVINGS
1	ENERGY EFFICIENCY SERVICES LTD (EESL, GOVT. OF INDIA)		SPLIT	44.00%
2	L.G. ELECTRONICS INDIA LTD		INVERTER	26.00%
3	VIDEOCON TELECOM			20.00%
4	TATA COMMUNICATION LTD		SPLIT	25.30%
5	LARSEN & TOUBRO LTD		SPLIT	25.80%
6	TATA TELESERVICES LTD		SPLIT	33.00%
7	TATA POWER LTD		SPLIT	37.50%
8	ASHOK LEVLAND LTD.		WINDOW	29.40
9	ACCENTURE SERVICES PVT LTD		SPLIT	37.00%
10	EMERSON LTD		11.0 TR DUCTABLE	19%
11	GOVT. OF KUWAIT INDUSTRIAL AUTHORITY	KUWAIT		38.5%
12	GOVT. OF GHANA STANDARDS AUTHORITY	GHANA		36%
13	SATURN PYRO, UTIM REGISTRATION OFFICE	MALAYSIA	CASSETTE	36.00%
14	SATURN PYRO, AT MALAYSIA POLICE HQ.	MALAYSIA	SPLIT	34.00%
15	CPE ENERGY SDN BHD	MALAYSIA		27.00%
16	SUSNOMICS ENGINEERING, ENERGY AUDITOR	DUBAI, UAE	SPLIT	35.00%
17	ZENITH ENERGY (BEE, Accredited Energy Auditor)	Er R. Gopala Krishna, FIE		37.00%
18	M/S. UNIC MAGNATE		SPLIT	38.00%

Validated by



for 33% & 44% Savings at 2 locations respectively.

3 - Savings achieved at different locations

## Sources

- Airtron Energy saver - <http://www.magnatron.in/air-conditioning-energy-saver/>

- Airco Savers - <http://www.airco-saver.com/>

## Please contact for more info

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