Frequently Asked Questions (FAQ's)

1 - What is Aircosaver

Aircosaver is an electronic control unit that adds state of the art intelligence to existing AC systems improving efficiency up to 30% resulting in a short ROI (return on investment) period.

2 - How does Aircosaver work

Its sensor-driven software algorithms are designed to detect thermodynamic saturation and to optimize the compressors accordingly. When overcapacity is detected, the Aircosaver switches the compressor off and avoids inefficient over cooling.

When the Aircosaver switches the AC system into "saver mode" the AC system makes maximum use of the stored cooling energy in the evaporator. Aircosaver has a sensor installed on the supply side of the evaporator which detects when the stored energy is used, once detected the compressor can work efficiently again and is switched on.

Since the correct point to switch the compressor varies from AC system to AC system and changes with different weather conditions, the Aircosaver is constantly adapting its settings to ensure efficient operation of the AC system at all times.

3 - What types of air conditioning systems are Aircosaver suitable

The Aircosaver is suitable to be installed on wall units, and window units, single split systems, cassette units, package units, Ptacs and RTU's (roof top units) up to 10 tons capacity. The Aircosaver does not work with chiller water systems, evaporative cooling systems or systems with variable speed drive (VSD) compressors.

4 - What is thermodynamic saturation

Thermodynamic saturation is the point at which the maximum amount of cooling energy is stored in the evaporator. Running the compressor beyond this point is inefficient since additional cooling energy cannot be stored and is thereby wasted.

5 - How does Aircosaver detect thermodynamic saturation

The Aircosaver's sensor is installed on the supply side of the evaporator. Its sensor-driven software algorithms detect thermodynamic saturation by sensing stable evaporator temperature.

6 - Does Aircosaver come with a warranty

The manufacturer warranty guarantees the Aircosaver for three years from the date of purchase.

7 - How long does it take to install Aircosaver

Installation is simple and takes approximately 15 - 30 minutes depending on local conditions. A detailed step-by-step installation manual is provided with each Aircosaver.

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8 - By shortening the compressor run time will this have a negative effect on humidity level

There are many factors that contribute to lowering humidity. Oversized units typically do a bad job of lowering humidity. These units are ideal for the Aircosaver. When installed on oversized units the Aircosaver can actually do a better job of lowering humidity, but most of the time, it is about the same. Remember, when the Aircosaver turns the compressor off, the evaporator is still cold and the blower is still running and condensing water from the air. In addition, the Aircosaver has specific algorithms to prevent humidity from being compromised.

9 - By shortening compressor run time will this increase the time it takes to reach the set point

Yes, but only slightly. For example, if a system takes an hour to reach the set point without the Aircosaver installed, it might take about an hour and five minutes to reach the set point with the Aircosaver installed. However, the tradeoff is significant since the compressor and condenser fan account for about 90% of the cost of system operation with the blower accounting for the other 10%. For the additional 5% in time that it takes the system to reach the set point, the compressor and condenser will be off about 25% of the total time.

10 - How does Aircosaver affect system life expectancy

The Aircosaver can actually increase system life expectancy by reducing equipment operating temperature and preventing evaporator freeze over by properly cycling the compressor. The increased inrush of current due to additional compressor starts is minimal when compared to the savings from the compressor off time. Moreover, the additional compressor starts/stops are offset by the lowering of the compressor and condenser operating temperatures (i.e., the #1 "killer" of motors is heat) and the fact that these additional starts are not "cold dead" starts.

11 - How is Aircosaver affected by inside cooling demand and outside weather conditions

There is no effect on the Aircosaver due to changes in inside cooling demand conditions or outside weather conditions since the Aircosaver is constantly adapting its settings to ensure efficient operation of the AC system at all times.

12 - Will Aircosaver cause system short-cycling

The Aircosaver has anti-short-cycling protection built into its algorithms and actually provides protection for the AC system to eliminate short-cycling problems. The Aircosaver provides for mandatory compressor off-time after it has reached thermal saturation / set point or with any power loss. Compressor manufacturers rate compressors to cycle no more than 10 times per hour. The Aircosaver

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will never allow the compressor to cycle more than 5 times per hour.

According to Copeland, who are leaders in compressor manufacturing, a compressor has a 20 year life span. During this lifetime, it is not as critical how many times it starts and stops in 24 hours but rather how long it is OFF before it has to restart. The more extreme the conditions are, the hotter the compressor will be along with high head pressure. The longer it is off, the more the pressure dissipates and cools down, making it less stressful to restart.

13 - What are typical ROI (return on investment) periods for Aircosaver

Typical ROI for the Aircosaver range from 6 months to 2 years. The two main factors are the cost you pay for KWh and the hours of operation. The more you pay for KWh and the longer your system runs the shorter your ROI.

14 - What are the purchase options for Aircosaver

The Aircosaver can be purchased outright or through shared savings model where the Aircosaver would be paid for by the savings it generates resulting in ownership.

15 - What are Aircosavers certifications and approvals

The Aircosaver is UL and CE compliant. Tested & compliant to international product safety and EMC standards. Full list of Tests & Approvals available at this LINK.

16 - Will installing Aircosaver void my warranty

No, under the Magnuson-Moss Warranty Act passed by congress manufacturers cannot void warranties on their equipment when aftermarket products are added, provided they are approved by the governing body that approves such products. If it is electrical, it must be approved by UL or ETL, and the Aircosaver is approved by both.

A standard thermostat turns an AC system on and off based on reaching the desired set point.

A Programmable thermostat does the same thing PLUS allows you to set times for on and off operation, in addition to, and/or regardless of, reaching the desired set point.

The Aircosaver works much the same way as a programmable thermostat but is based on the time it takes to fill the evaporator with refrigerant. These timed amounts will vary based on temperature, the hotter the temperature, the longer it takes to fill up and get as cold as possible. The Aircosaver only intercepts the 24 volt signal from the thermostat to compressor and does not interfere with cooling ability, or modify the mechanics of the system in any way. When overcapacity is detected, the Aircosaver switches the compressor off to avoid any inefficient overcooling, the fan continues running and your AC system makes maximum use of the stored cooling energy in the evaporator coil. Once the stored energy is used up, the compressor can work efficiently again and is switched back on.

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