



**DX Optimizer**

**Product Brochure**





### UPGRADE your aircon unit now

Instead of investing a lot of money into an expensive new air conditioning system, there is an easy and affordable way to improve the energy efficiency of your existing unit: Upgrade it with an DX Optimizer.

### Energy savings of 20-30%, short payback period

Independent tests and reference installations have demonstrated average energy savings between 20% and 30% - some clients have reported even higher savings. Payback time for most applications is well below two years.

### For which systems is the DX Optimizer suitable?

The standard DX Optimizer version is suitable for most residential and light commercial DX (direct expansion) AC systems, e.g. wall-mounted and window units, single split systems and cassette units. The standard DX Optimizer does not work with chilled water systems, evaporative cooling systems, inverter type systems or multi split systems.

### Retrofit system - Easy and quick to install

The DX Optimizer is designed to be installed into existing systems as a retrofit device. Installation is simple and takes approximately 15 minutes (depending on local situations).

A detailed step-by-step installation manual is provided with each DX Optimizer.

### Save up to 30% On your running costs



### Features & Benefits:

- Separate versions for all main power supplies (230V, 110V, 24V)
- Available with or without strain relief for internal or external mounting
- Automatic parameter settings for energy savings at no noticeable decrease in cooling comfort
- Optimized for systems up to 10 tons
- Anti short cycling protection and overall compressor protection
- Enclosure made of non-flammable, shock-proof polycarbonate
- Tested & compliant to international product safety and EMC standards
- Developed and manufactured in Germany to highest quality standards.



## Improving energy efficiency is the best short-term answer to today's energy problems

Until cleaner and sustainable sources of energy become available on a large scale, improving the energy efficiency of today's systems is the best way to reduce CO2 emissions and save energy. And the best thing about it is:

Everyone can contribute!



## Air Conditioning has a huge potential for efficiency improvements

Air conditioning is one of the largest energy consumers in the residential and industrial sector. Thousands of air conditioners put immense demands on electricity networks. On a smaller scale, air conditioning probably accounts for a significant part of YOUR energy bill. Many existing air conditioners use old and quite inefficient technology. Although improved technology has become available in more expensive systems (e.g. inverter technology), the payback time of these systems is still very long.

Instead of investing a lot of money into an expensive new system, there is an easy and affordable way to improve the energy efficiency of your unit – Upgrade it with an DX Optimizer

### The DX Optimizer is:

- an electronic control unit that adds state-of-the-art intelligence to air conditioning systems and improves their energy efficiency

- achieves average energy savings of between 20% and 30% resulting in a short payback period

- a retrofit product to upgrade existing units.



## How does the DX Optimizer work?

### Shortcomings of typical AC systems

When switched on, typical air conditioning systems operate continuously until the room thermostat senses the desired temperature and turns the system off. As the room warms up, the thermostat switches the air conditioner back on and the cycle is repeated.

Air conditioning systems are usually dimensioned to cope with the extreme cooling demands of the few hottest days of the year (plus a safety margin). However, in most operational conditions, this maximum output is not required and the system is oversized. So running the system continuously until the room thermostat switches it off means that the system operates with excess capacity most of the time.

### A typical cooling cycle with excess capacity looks like this:

- When the cycle starts, the compressor pushes cooling energy into the heat exchanger which acts as an energy storage. At this stage, the system works with high efficiency, because compressors operate most efficiently when fully loaded
- In normal weather conditions, the energy storage is soon fully “charged”. From this point onwards the compressor provides more cooling energy than the heat exchanger can take up (thermodynamic saturation)
- Running the compressor beyond this stage does not increase the cooling effect any more. It’s just a waste of energy!

### The DX Optimizer compensates these shortcomings and adds intelligence to your AC systems

This is where the DX Optimizer cuts in. Its sensor-driven software algorithms are designed to detect thermodynamic saturation and to optimize the compressor accordingly. When overcapacity is detected, the DX Optimizer switches the compressor off and avoids inefficient overcooling. Your unit switches into “saver mode”. The fan keeps running and your system makes maximum use of the stored cooling energy in the heat exchanger. Once the stored energy is used up, the compressor can work efficiently again and is switched back on. The set room temperature is reached without the inefficient parts of the cooling cycle. This results in significant energy savings without compromising cooling comfort. Since the correct point to switch the compressor varies from unit to unit and changes with different weather conditions, the DX Optimizer is constantly adapting its settings to ensure efficient operation of your air conditioning system at all times.