



The ECO<sup>3</sup>™

Improving the  
Energy Efficiency  
of Your Cooling  
Systems

SMARTCOOL™

# Energy Efficiency Through Cycle Optimization

The ECO<sup>3</sup>™ reduces the run time of compressors in A/C, heat pump and refrigeration systems (HVAC).

Thermostats are incapable of achieving maximum efficiency for the cycles in air conditioning, heat pump and refrigeration systems. The ECO<sup>3</sup>™ resolves this shortcoming.

- At start up, a cooling system produces a large temperature drop using little energy.
- As the temperature drops closer and closer to its lowest set point, the system compressor uses more and more energy to produce that temperature drop.
- The ECO<sup>3</sup>™ is installed between the primary controller (like a thermostat) and the compressor, allowing it to intercept signals from one to the other.
- The ECO<sup>3</sup>™ then determines when and for how long a compressor will run, helping the compressor operating cycle to run in its most efficient state.
- By helping the compressor run in this more efficient state, the ECO<sup>3</sup>™ reduces the total run time of the compressor. This reduces the total electrical consumption of the compressor.

Smartcool's ECO<sup>3</sup>™ can save an average of 15% (kWh) usage and 10% (kW) peak demand on compressor operation.

# HVAC & Refrigeration Compatibility

The ECO<sup>3™</sup> is compatible with any HVAC or refrigeration system with one or two stages of control.

Smartcool's ECO<sup>3™</sup> has proven successful at improving the energy efficiency of systems such as:

- Virtually all compressor based air conditioning systems including commercial rooftop units and residential systems
- Refrigeration systems
- Heat pump systems



The ECO<sup>3™</sup> interfaces with existing controls and equipment. Installation is quick and reliable with no impact to system operation or comfort.

Even on the most modern equipment with intelligent controls, or where other energy saving processes are already installed, the ECO<sup>3™</sup> can provide energy efficiency gains.



# Safe Energy Savings

Smartcool's ECO<sup>3</sup>™ achieves cost cutting energy efficiency with no risk to existing equipment, operating conditions or comfort.



Smartcool's technology has undergone rigorous independent third party testing by industry leaders such as Oak Ridge National Laboratories (part of the US Department of Energy), demonstrating its effectiveness and reliability.

## Features of the ECO<sup>3</sup>™:

- Display screen shows savings.
- Does not allow compressors to short cycle.
- Will fail to safe through automatic override, removing itself from the circuit.
- Can be easily manually bypassed for service and maintenance.
- Installed with circuit protection ensuring that no voltage spikes can be introduced to the system from the product.
- Weatherproof enclosure protects the product in outdoor installations.

"The ECO<sup>3</sup>™ system not only helps us significantly cut energy costs, it also enables us to provide for a better, 'greener', environment for our workers and customers."

Victor Paterno, President of 7-Eleven Philippines

# Cut Costs & Start Saving

Smartcool conducts an energy review of your air conditioning, refrigeration and heat pump usage at no cost and no obligation.

- The energy review targets where you can achieve energy savings with Smartcool technology, and the period of return on your investment.
- The energy review is the first step to becoming more energy efficient, cutting your energy bill and reduce your carbon footprint.

Once the ECO<sup>3™</sup> has been installed on your HVAC or refrigeration system, you can see immediate savings logged on the display screen. By doing a simple test with the ECO<sup>3™</sup> active in the circuit and with it manually bypassed, you can easily get a comparison of your system's performance.

The ability to compare energy savings performance at any time is a key factor in qualifying for government and utility energy efficiency incentives.

**Contact us to learn more about our solutions, or book your complimentary energy review today.**

Here are just a few sample results from energy efficiency projects Smartcool has completed for clients with various cooling equipment and needs.

## Comfort A/C and Heat Pumps

Annual Energy Savings:  
**29,000 kWh**

Annual GHG Savings:  
**17,743 kg**



## Mission Critical A/C

Annual Energy Savings:  
**18,410 kWh**

Annual GHG Savings:  
**11,262 kg**



## Packaged Refrigeration

Annual Energy Savings:  
**41,640 kWh**

Annual GHG Savings:  
**25,476 kg**





Smartcool is a global clean technology company helping some of the world's largest organizations enhance their profitability, while lowering their carbon footprint.

Publicly listed on Canada's TSX Venture Exchange (TSX-V: SSC), Smartcool has been recognized for excellence within the clean technology industry.



## Specifications

Operating Voltage 24VAC, 350mA  
Display 4 Digit, 7 segment, 3 or 6 LED  
Enclosure IP64  
Dimensions 145mm x 159mm x 27mm  
Environmental -30° to 60° C  
Channels One or two  
Input Voltage 250VAC (max.)  
Contact Rating 250VAC, 360VA, B300

## Standards: Electrical Safety & EMC

North America: UL 916, C22.2 No 205-M1983  
European Union: EN 61326, EN 61000-3-2,  
EN 61000-3-3, EN 61010.1  
Australia: EN 61326, AS/NZS 61010.1

**SMARTCOOL™**

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