The Smartcool ECO³™

The ECO³™ is a microprocessor based retrofit for air conditioning, heat pump & refrigeration systems. It optimizes compressor cycling, maintaining temperature and humidity while reducing compressor run time by 15-30%.

The ECO³™ is compatible with air conditioning, heat pump and refrigeration systems with one or two stages of control. This includes roof top units, split systems, swimming pool heaters and many more.   Full product details are available here:

www.smartcooleco3.com

ECO³™ Demonstration Model Savings Check

This Sales Model is a fully operational unit removed from actual service and display data is typical of actual field results. To see how the ECO³™ records savings it achieves on compressor operation:
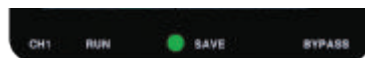
1. Push the Enter button on the ECO³™. Notice the amber light comes on, and the display shows a number like "0.043" which means 43 hours logged. This first number with the amber light indicates the number of run hours logged by the ECO³™.

2. Push the Enter button 4 times and record the run, save, manual bypass and automatic override numbers that appear on the display screen. The colour of the light will change as you press the Enter button to indicate which type of logged hours are being displayed.
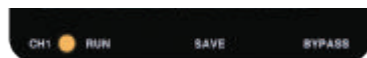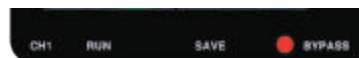
Amber Light = Run Hours	Green Light = Save Hours	Steady Red Light = Manual Bypass Hours	Flashing Red Light = Auto Override Hours
Hours that the ECO³™ has allowed the compressor has been running.	Hours that the ECO³™ has prevented the compressor from running in order to save energy.	Hours that the ECO³™ has been manually placed in bypass and had no impact on the compressor operation.	Hours that the ECO³™ has been automatically overriden, removing itself from the circuit and having no impact on the compressor.

Use the formula below or Smartcool's online savings calculator to estimate savings achieved by the ECO³™
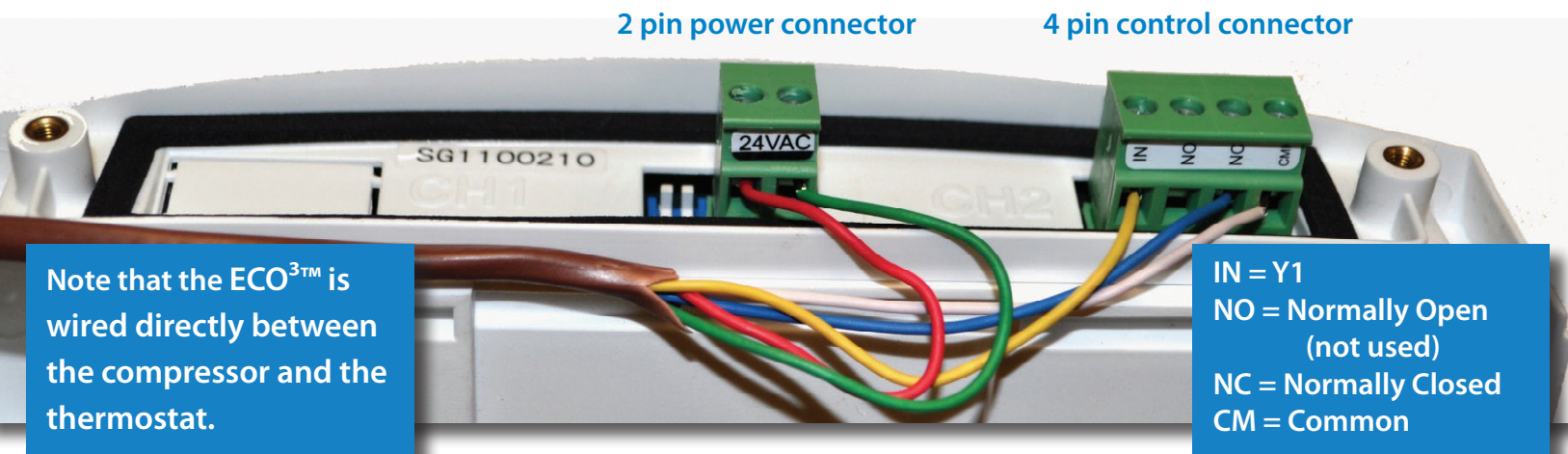
www.smartcooleco3.com/calculators/sc_savings_calc.php

Save Hours ÷ (Run Hours + Save Hours + Override Hours) = % run time saved

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Demonstration Model Details

1. Lower the thermostat to send a signal to the compressor to begin cooling. This signal activates either the amber 'Run' light or the green 'Save' on the ECO³™. The amber 'Run' light shows the ECO³™ is allowing the signal from the thermostat to reach the compressor, causing it to begin running. The green 'Save' light shows the ECO³™ has prevented the signal from reaching the compressor, so the compressor will not run.

2. Take a look at the wiring at the back of the Demonstration Model. Note how the Y1 is interrupted by the ECO³™, how the power is supplied, and the required common wire.

2 pin power connector

4 pin control connector

Note that the ECO³™ is wired directly between the compressor and the thermostat.

IN = Y1
NO = Normally Open
(not used)
NC = Normally Closed
CM = Common

Questions? Call Smartcool at +1-866-571-6554

ECO³™ Wiring Method

*Full installation instructions and requirements are provided in the ECO³™ Installation Manual.

1. Identify the Y1 compressor control wire and the common. Wire the ECO³™ to interrupt (break) the Y1 wire as shown above.

- The thermostat side of the Y1 is terminated to the Input on the ECO³™ (in yellow above).
- The compressor side of the Y1 is terminated to the Normally Closed on the ECO³™ (in blue above).
- The common is terminated to the Common on the ECO³™ (in white above) to supply reference voltage.

2. Provide 24 VAC power to the ECO³™, which requires supply and common of 0.35 amps.

- If available, control transformer power supply of 24 VAC is acceptable, but often an external power supply is required.
- Use a 3 amp blade fuse on the low voltage side for protection.
- The maximum voltage that the ECO³™ can accept is 24 VAC. Do not apply over-voltage.

3. Mount the ECO³™ on an appropriate flat surface. A mounting bracket, exclusive of screws, is included with the ECO³™.

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