

# EB-EMS-01 ecobee Energy Management System

Technical Specification Rev 1.0



The ecobee Energy Management System (EMS) is the newest technology designed for the commercial market. It is ideal in applications where a simple programmable thermostat does not provide adequate controls and functionality and a full-scale building automation system is too complex and cost prohibitive. The ecobee EMS is user friendly reduces a building's operating costs and delivers increased energy conservation.



Through a dedicated management portal users can remotely monitor, identify, analyze and trouble shoot performance issues. Manage the temperature and operational settings from a central location and take action without having to send a technician on-site reducing the need for truck rolls. The ecobee EMS delivers consistent and predictable installations resulting in less time on the job site. Once installed, the set-up is straight forward and efficient with our intuitive design, allowing users to manage an unlimited number of thermostats in multiple locations across diverse geographies. The configuration protocol allows for grouping of thermostats and multiple users with the flexibility to provide each user with varying degrees of accessibility and operating permissions.

The ecobee EMS is the system that will maximize any buildings efficiency, reduce energy consumption and deliver significant cost savings.

## Thermostat Features and Benefits

Feature	Benefits
7 day programming, with multiple periods per day	Flexible enough to cover the schedule of the most demanding applications.
1F (0.5C) resolution	Precision sensing to ensure accurate readings
Humidity display and control	Maintain a comfortable environment and prevent mold growth.
Intelligent setback/set forward recovery	Learns how the system heats and cools to ensure maximum efficiency and maximum comfort.
Auto-changeover	Increase control and comfort by letting the system determine when to heat and when to cool
Random restart	Automatically randomizes when the HVAC systems are powered up, eliminating cost spikes in power consumption.
One button override	Simple to use, complies with Title 24
Programmable Hold options	Multiple options for the activity that will take place when a hold action is activated. Increase flexibility while retaining control
Secure WiFi connectivity	All the benefits of internet connection without having to run Cat5 wire to the thermostat
Access code with user restrictions	Determine who can make adjustments, if any, on the thermostat display.
Economizer control	Maximum efficiency of the overall system by allowing integration to an economizer logic controller
Automation functionality	Integrate with other systems or sensors to automatically control the thermostat settings or turn on a relay.
Operating Alerts and Service Reminders	Will appear on the screen of the thermostat and in auto-generated emails with customizable contact information, keeping you in touch with your customers.
Easy to use Wizards for Programming and Installation	Simple, intuitive wizards make installation and programming easy and efficient.

## Web Portal Features and Benefits

Features	Benefits
Free	There is no monthly or annual fee for the management portal
Manage an unlimited number of thermostats	With a simple click of a mouse make change to one or as many thermostats as required, quickly and easily.
No special software to load	Accessible from any PC at any time
Group thermostats	Maximum flexibility to organize thermostats and create sets that meets specific business needs
Create Users and Permissions	Assign an unlimited number of users and control their level of access through simple permissions.
Remote monitoring, diagnostics and control	Monitor, make changes, or even diagnose problems from anywhere. Reduce truck rolls and ensure a technician has the right parts before arriving at the job site.
Scalable	The ecobee EMS fits any project and will grow with any size of business.

### Temperature Ratings

Heat Set point: 45 – 79°F (7 – 26°C)  
 Cool Set point: 58 – 92°F (14 – 33°C)  
 Display: 40 – 100°F (5 – 37°C)  
 Sensitivity: +/- 1°F (0.5°C)  
 Operating: -40°– 160°F (-40°– 70°C)

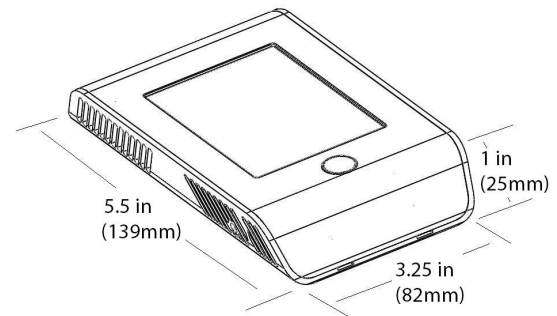
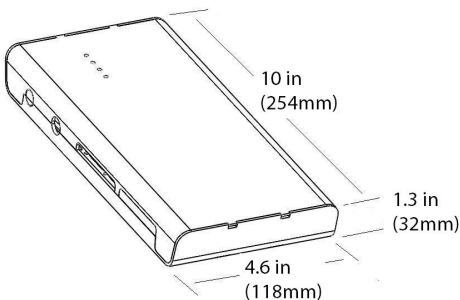
### Humidity Ratings

Humidify Set point: OFF, 20 to 50% R.H  
 De-Humidity Set point: OFF, 30 to 60% R.H  
 Display: 0 - 90% R.H  
 Sensitivity: +/- 5% R.H.  
 Operating: 5 – 95% R.H

### Power

AC Transformer- 24Vac- 3VA minimum (not included)  
 Power Adapter – 120V Hz to 12V DC 1A, ecobee # EB-PS-01 (not included)  
 Battery – CR2032 – 3V lithium coin cell (included)

### Dimensions



### Equipment Compatibility

- Gas/Oil/Electric conventional heating (up to three stages)
- Air to air or Ground Source heat pump with Auxiliary heat (up to 4 stages)
- Dual fuel systems
- Electric cooling (up to 2 stages)
- Economizer
- Central humidifier
- Central dehumidifiers
- Heat Recovery Ventilators
- Energy Recovery Ventilator

## Reminders and Alerts

- Air filter change
- Humidifier pad change
- UV filter change
- High and/or low temperature alerts
- Excess auxiliary heat run time alert
- Auxiliary heat outdoor temperature alert
- System fail to heat alert
- System fail to cool alert

## Automation

- 2 dry contact inputs that can be programmed to
  - Turn off the AC
  - Adjust the heat and or cool set temperatures
  - Switch the system to occupied or unoccupied mode
  - Active an accessory relay (up to three )
- Both inputs with individual, programmable activation and/or deactivation timers

## Additional features

- Celsius or Fahrenheit display
- Occupied and Unoccupied terminology
- 365 day scheduling
- Automatic daylight saving time adjustments
- Adjustable Auto change-over dead-band
- Installer programmable options including
  - Programmable balance point
  - Heat and cool differential temperature
  - Minimum compressor off time
  - Heat and cool fan dissipation time
  - Display temperature offset
- Outdoor temperature detection (requires internet connection)

## Internet Connectivity and Security

ecobee EMS uses the latest encryption technologies to ensure the data being transmitted as well as access to your network is protected.

The ecobee EMS is designed to support

- 802.11 b or g wireless routers
- WEP 64, WEP 128, WPA1 and WPA 2 encryption methods
- DHCP (dynamic) or Static IP addressing
- 168 bit SSL encryption

Typical network traffic is 15-18MB per month per thermostat

**For more information please visit [www.ecobee.com](http://www.ecobee.com)**