



Frequently Asked Questions

Q. How can my business become a member of the ENERGY AWARE program?

A. Contact NEMA Industry Director William Hoyt at bill.hoyt@nema.org for details.

Q. How are ENERGY AWARE thermostats different than ENERGY STAR thermostats?

A. ENERGY AWARE thermostats are submitted to third party testing to verify compliance with the newly-established specifications in NEMA DC3, Annex A. A comparison of the NEMA DC3 specifications and the Energy Star (2009) specifications is shown below.

Verification of test results will allow continued participation in the ENERGY AWARE program.

ENERGY STAR is a program of the U.S. Environmental Protection Agency and the U.S. Department of Energy. As of December 31, 2009, the ENERGY STAR program no longer allows manufacturers to label new programmable thermostat products with the ENERGY STAR logo. However, some programmable thermostats carrying the ENERGY STAR logo may still be available for sale in the U.S. as distribution channel inventories of programmable thermostats produced prior to December 31, 2009 are sold down.

Comparison of key features for energy efficient programmable thermostats:

FEATURE	ENERGYSTAR (2009)	NEMA DC3 – ANNEX A	EXPLANATION - BENEFITS
Programs	5-2 minimum (weekday / Weekend)	5-2; 5-1-1, or 7 day independent	Improved user interface. Provides greater user flexibility for non-traditional work week. More opportunities to match heating requirements with users schedule.
Programming events	At least 4	At least 4	No change
Setback interval	Not Specified	8 hours min	Minimum number of hours setback or setup allows for more energy savings realized for homeowner. i.e. 8 hours saves more energy than a 6 hour setup or setback.

FEATURE	ENERGYSTAR (2009)	NEMA DC3 – ANNEX A	EXPLANATION - BENEFITS																														
Preprogrammed settings	<p><i>Table 1: Programmable Thermostat Setpoint Temperatures</i></p> <table border="1" data-bbox="380 272 879 644"> <thead> <tr> <th>Setting</th> <th>Setpoint Temperature (Heat)</th> <th>Setpoint Temperature (Cool)</th> </tr> </thead> <tbody> <tr> <td>Wake</td> <td>≤70°F</td> <td>≥78°F</td> </tr> <tr> <td>Day</td> <td>setback at least 8°F</td> <td>setup at least 7°F</td> </tr> <tr> <td>Evening</td> <td>≤70°F</td> <td>≥78°F</td> </tr> <tr> <td>Sleep</td> <td>setback at least 8°F</td> <td>setup at least 4°F</td> </tr> </tbody> </table>	Setting	Setpoint Temperature (Heat)	Setpoint Temperature (Cool)	Wake	≤70°F	≥78°F	Day	setback at least 8°F	setup at least 7°F	Evening	≤70°F	≥78°F	Sleep	setback at least 8°F	setup at least 4°F	<p><i>Table 1: Programmable Thermostat Setpoint Temperatures</i></p> <table border="1" data-bbox="909 272 1430 644"> <thead> <tr> <th>Setting</th> <th>Setpoint Temperature (Heat)</th> <th>Setpoint Temperature (Cool)</th> </tr> </thead> <tbody> <tr> <td>Wake</td> <td>70°F (21.1°C)</td> <td>78°F (25.6°C)</td> </tr> <tr> <td>Leave</td> <td>setback at least 8°F (4.4°C)</td> <td>setup at least 4°F (°C)</td> </tr> <tr> <td>Return</td> <td>70°F (21.1°C)</td> <td>78°F (25.6°C)</td> </tr> <tr> <td>Sleep</td> <td>setback at least 8°F (4.4°C)</td> <td>75°F (23.9°C)</td> </tr> </tbody> </table>	Setting	Setpoint Temperature (Heat)	Setpoint Temperature (Cool)	Wake	70°F (21.1°C)	78°F (25.6°C)	Leave	setback at least 8°F (4.4°C)	setup at least 4°F (°C)	Return	70°F (21.1°C)	78°F (25.6°C)	Sleep	setback at least 8°F (4.4°C)	75°F (23.9°C)	<p>Increased comfort. 75°F is a more realistic setting for homeowners. While in theory it is an increase of energy use over the 1.2 specification it more likely that the user will maintain the preset program and not over-ride it.</p> <p>Demand reduction by utilities targets peak usage in afternoon and early evenings. Cooling the home at night-time when energy supply is in surplus helps balance energy demand.</p>
Setting	Setpoint Temperature (Heat)	Setpoint Temperature (Cool)																															
Wake	≤70°F	≥78°F																															
Day	setback at least 8°F	setup at least 7°F																															
Evening	≤70°F	≥78°F																															
Sleep	setback at least 8°F	setup at least 4°F																															
Setting	Setpoint Temperature (Heat)	Setpoint Temperature (Cool)																															
Wake	70°F (21.1°C)	78°F (25.6°C)																															
Leave	setback at least 8°F (4.4°C)	setup at least 4°F (°C)																															
Return	70°F (21.1°C)	78°F (25.6°C)																															
Sleep	setback at least 8°F (4.4°C)	75°F (23.9°C)																															
Recovery types	Conventional, heat pump or precomfort	Conventional recovery required. Adaptive recovery optional	Adaptive recovery saves energy because it takes the guess work out of determining when to start heating or cooling pre-comfort. It minimizes (and optimizes) the start time, eliminating wasted energy.																														
Hold	Temporary or permanent	Temporary <u>and</u> permanent	<p>Permanent hold allows users to conserve energy while away from home for extended periods, guaranteeing energy savings.</p> <p>Temporary hold saves energy by automatically reverts to the setback schedule after a short period of time.</p>																														
Power outage	Preset settings must be retained	Battery or capacitor, non-volatile memory	<p>Recommended the schedule (E* and/or custom) must be retained in non-volatile memory.</p> <p>The benefit is it ensures the consumer uses the setback schedule and does not become frustrated with</p>																														

FEATURE	ENERGYSTAR (2009)	NEMA DC3 – ANNEX A	EXPLANATION - BENEFITS
			having to reprogram the thermostat when the power is interrupted, or the batteries are exhausted.
Operating differential	No requirement	Ability to compensate by adjusting duty cycle or temperature differential	<p>This allows the installer to match the control to the equipment type resulting in correct cycling based on the equipment type.</p> <p>Reduced droop and overshoot of room temperature, resulting in energy savings for the consumer.</p>
Low lighting	No requirement	Backlighting	Improved user interface. Easy to read; this allows the user to better understand any changes they make or what the thermostat is doing.
Room temp. swing	± 2°F	Within 2°F	<p>The benefit is reduced room temperature swings, resulting in less energy usage.</p> <p>Note – See HW/ASHRAE document that proves better temp control results in energy savings.</p>
Droop	No requirement	1.5°F max	Increase comfort – prevent user from feeling discomfort which may move them to make changes in the temperature setting, which could cost energy.
Static temp. accuracy	No requirement	± 1°F	Increase comfort - If readings do not match actual temperature, then the setback schedule will not provide the full savings, or the owner may experience discomfort and over-ride the program.

FEATURE	ENERGYSTAR (2009)	NEMA DC3 – ANNEX A	EXPLANATION - BENEFITS
Auxiliary heat indicator	No requirement	Visual indicator required	Improved user Interface. User aware that the auxiliary heat is running, user could then make adjustments to minimize the use of auxiliary heat.
Hold indicator	No requirement	Visual indicator required	Improved user interface. User aware that the hold may be reducing their energy savings or the hold does not meet Energy Star schedule.
Battery indicator	No requirement	Visual indicator required when battery used	Improved user interface. Alerts the user to condition that could result in programmed schedule being eliminated.

Q. Are there any costs associated with the ENERGY AWARE program?

A. There modest licensing fees associated with program administration and maintenance. Costs associated with testing are the responsibility of the licensee.

Q. How will programmable thermostats be tested?

A. Testing will be at an ISO 17025 registered facility. The testing will either be performed by a qualified third party or witness tested at a manufacturers qualified testing facility.

Q. When do you anticipate the first programmable thermostats to be certified with the ENERGY AWARE label?

A. NEMA expects to be able to certify by the fall of 2010.