

Technology: Smart thermostats

What?

Smart thermostats regulate the temperature in buildings in a smarter way than conventional thermostats. They can be self-learning and therefore know how fast a building heats up and cools down within a specific period (e.g. one week). Temperature schedules can be created, so the thermostats determine how far in advance they need to start heating in order to reach the desired temperature on the set time. They know the outside temperature and take this into account. This way they are sure they are able to efficiently heat the building, and keep it at the right temperature. They remember how they heated the building and can show this. They also remember why they needed to heat up the home. They offer insight into the heating behaviour of the inhabitant, so he is able to optimise this. Users can increase or decrease the temperature through the thermostat or through the app. With the app you can remotely control the smart thermostats. Some thermostats also use geo-fence to determine if you are nearby. They switch off when leave your house and back on when you approach home.

These new thermostats are smart because they spend time doing the thinking that most of the people just don't do: turning themselves off when nobody's home, targeting temperatures only in occupied rooms, and learning your household schedule through observation. Plus, with their sleek chassis and integrated smartphone apps, these thermostats are actually fun to use.



Examples of smart thermostats: Nest (left),Anna (middle) and Honeywell (right)

Why?

By observing the habits of the inhabitants and by possibilities of remote control via Smartphone, the smart thermostat can save energy by controlling the heating system in the most efficient way.

Cost

The cost of a smart thermostat is estimated between 200€-350€. Learning thermostats save enough energy to pay itself back in less than two years.

Where?

Smart thermostats can be used in all type of buildings.

Manufacturers (thermostat type):

- NLE (Anna)
- Eneco (Toon)
- Essent (E-thermostat)

- Nest labs (Nest)
- Nefit (Easy)
- Itho Daalderop (spIDer)
- RWE (SmartHome)
- Danfoss (Link CC)
- Honeywell (Evohome)

Things to consider:

Saving on heating costs depend on many factors and not only on the use of a smart thermostat. For instance you need a well-functioning boiler. Isolation of your home also plays an important role. But even most important: the behaviour of the inhabitant. He can partly choose if and how much he wants to save energy with the use of a smart thermostat.

Want to learn more?

[1] <http://passiefhuisbouwer.nl/slimme-thermostaten-vergelijken/> (in Dutch)