



HEATING SOLUTIONS

**DYNAMIC ENERGY
MANAGEMENT**

Intelligent home heating – adapts to the climate and cuts your energy costs

Dynamic Energy Management:
Intelligent, energy-saving control for underfloor heating

- Adapts to minute-by-minute changes in your home
- Keeps every room at a constant temperature
- Uses up to 8% less energy



Step into the home of the future;

It's warm and comfortable

— and it costs you less to keep it that way.

Uponor's Dynamic Energy Management simplifies underfloor heating installation and improves energy efficiency.

Who wants to spend their days fiddling with thermostats and worrying about energy use? If you're anything like us, you don't want your cosy home to cost the earth, but you do expect it to be warm and comfortable from the moment you wake to the time you turn in for the night.

So we developed Dynamic Energy Management, a control technology that continuously monitors the comfort of your home and the energy efficiency of your underfloor heating. It does away with the all-or-nothing, on-off switching technology of standard heating controllers. Dynamic Energy Management monitors your entire home and each individual room. It supplies the minimum amount of energy to keep room temperatures stable and the whole system in balance.

Dynamic Energy Management is quick to react too. It makes a cold room feel comfortably warm up to 25% faster than standard controllers.

The most energy-efficient underfloor heating system you can get.

People love underfloor heating. It makes for an easy-going lifestyle: spacious, adaptable, and energy-efficient. Research shows that underfloor heating is at least 5% more efficient than radiators*. With Dynamic Energy Management, your energy savings are bigger still – as much as 8% better than ordinary underfloor heating systems**.

Dynamic Energy Management gives you underfloor heating at its most efficient. Room temperatures remain stable while energy consumption falls. The thermostats are small, wireless, and silent. Your home looks neat and uncluttered; your room layouts stay flexible.



A faster installation with fewer call-backs.

Dynamic Energy Management makes life easier for installers and for homeowners. Installers finish the job sooner because the technology helps them check and balance the system. Homeowners can kick off their shoes and enjoy the warmth straight away. They're not troubled by the temperature highs and lows of standard on-off thermostats. They set their room temperatures once and forget about it.

Straightforward installation with fewer teething problems. Dynamic Energy Management simplifies underfloor heating installation. The diagnostic features save you time, while Auto-balancing leads to trouble-free running and fewer call-backs.

When you've connected your system, the Room Check feature warns you if any thermostats are incorrectly registered. It won't know which ones are wrong, but it will give you enough information to fix the problem. When everything's right, Room Check will confirm.

Auto-balancing could save you a return trip. Once the heating is switched on, Dynamic Energy Management balances the system for you. And not just once. Auto-balancing is continuous; it constantly adjusts the water flows to reflect changing conditions inside and outside the home.

You can set Dynamic Energy Management to monitor your installation long after you've finished the job. For example, if the system becomes under- or over-powered, it will warn the homeowner. Instead of a call-out to diagnose and fix, you can probably resolve the problem over the phone.

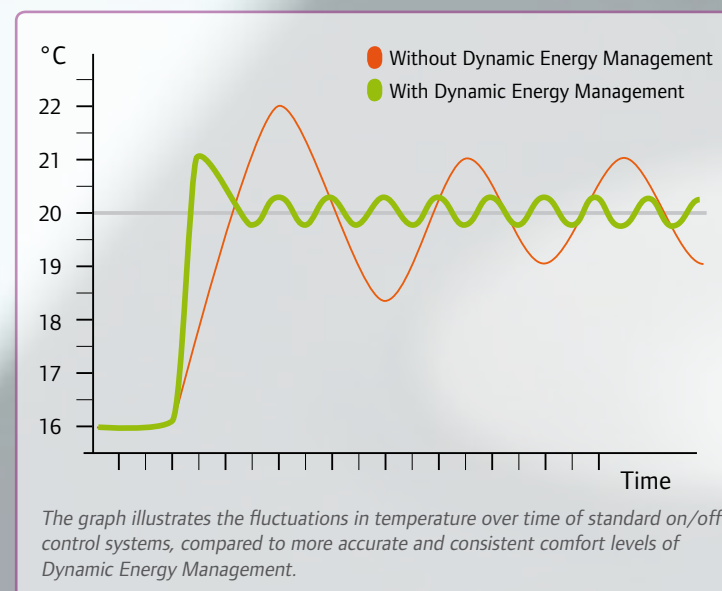
Constant temperatures and continuous energy savings. The Auto-balancing feature of Dynamic Energy Management never stops working. Minute-by-minute, it monitors room temperatures and water flows. Auto-balancing evens out the temperature peaks and troughs created by standard thermostatic heating controllers. The results are comfortably stable room temperatures and a much more efficient use of energy.

Dynamic Energy Management feeds in the least amount of energy required to keep temperatures steady. Unlike standard controllers it doesn't switch off when the temperature gets too high, then switch on again when it gets too low. This endless cycle of powering up, overshooting, cutting out, cooling, and powering up again is highly inefficient. It eats up far more energy than your home needs. In tests, Dynamic Energy Management has been proven to be up to 8% more energy efficient**.

* Independent two-year study commissioned by Eu-ray (The European Association for Surface Heating and Cooling) and conducted jointly by the Danish Technical University and the University of Padua. Report published 2007. With a condensing boiler, underfloor heating is 5% more efficient than radiators. With an air-source heat pump, it's 20% more efficient; with a ground-source heat pump, 30% more efficient.

** Energy savings compared to standard on/off control systems, verified by three independent tests: Delta Technology Development, Denmark; SP Technical Research Institute, Sweden; and Technical University, Dresden, Germany.

Time-saving, energy-smart, comfort-enhancing Dynamic Energy Management makes so much more of underfloor heating.



Great for homeowners...

Just enough energy to do the job

How much energy do you need to keep your house warm? Almost certainly less than you're consuming now. *Dynamic Energy Management* uses just enough energy to keep you comfortable. There's no wastage, but plenty of savings.

Stable room temperatures

When you choose a comfortable room temperature, *Auto-balance* makes sure that's the temperature you get. All day long. There's no yo-yoing between hot and cold, no putting-on and taking-off of sweaters, and no fiddling with thermostats to catch up.

It's the same for every room in your house. Auto-balancing knows what temperature each room should be, and it constantly adjusts water flows to keep them stable. When the sun beats down on one side of the house and the wind cuts against another, it shifts the flows to compensate. It maintains your comfort in all weathers.

Complete temperature control

The interface unit gives you much greater control over your heating. To stop boisterous children ramping up the temperature, you can set maximum and minimum ranges for each thermostat. For example, you could set bedroom mins and maxes at 15°C and 19°C, and living room mins and maxes at 17°C and 23°C.

Works well with open fires and range cookers

If you have another heat source in your house, such as an open fire or a range cooker, it will raise the temperature to the point where the underfloor heating in that room switches off. While your Sunday lunch roasts in the oven or your fire roars in the grate, your floor goes cold. And later, when the oven or fire cools, it takes much longer for your underfloor heating to bring your floor back from cold.

Comfort Setting overcomes this problem by continuing to trickle heat into the room with the fire or cooker. The heat flow (anything up to 12% of normal demand, specified during system set-up) stops the floor going cold, which means it can start to generate warmth as soon as the other heat source cools.

Great for installers...

Straightforward installation

The controllers, interface, and thermostats of Dynamic Energy Management are easy to install. The thermostats are wireless, and the interface is 'plug-and-play' technology.

Easy yes/no activation

Dynamic Energy Management comes with all features deactivated. When you commission the system, you activate the features you need – nothing more. The rest you can leave deactivated.

Activation is a simple yes/no, next/previous routine that takes place within installer mode. When you've finished, you leave the system in basic or advanced mode, depending on the level of control that the homeowner wants.

Check your installation

No matter how careful you are with loops and thermostats, sometimes things get confused. If you don't catch the problem at the time of installation, you'll almost certainly get a call-back a few weeks or months later. Dynamic Energy Management saves you that headache.

When you've connected the system, the *Room Check* feature verifies that everything's registered correctly. It works best at night when there's minimal interference from other heat sources such as sunshine and appliances. Room Check will tell you whether your installation is correctly registered.

No manual balancing

Installing underfloor heating is one thing. Commissioning it is another. To do the job properly, you have to go back days or weeks later after decorating and furnishing – when the home is complete.

But not with *Auto-balance*.

You set the system, and you leave it to get on with the job. No need for flow calculations or temperature measurements – Auto-balancing does it all for you. And it goes on balancing through sun, wind, and frost; through the changing seasons; and through the household's changing lifestyle and usage patterns.

Auto-balance is a patented technology unique to Uponor. It's an industry-first in underfloor heating.

Easier fault-finding

If you choose to activate it, the *Supply Diagnostics* feature will flash up a warning if the system becomes under- or over-powered. That's a huge help because you may well be able to resolve the problem over the phone.

Works supremely efficiently with heat pumps

The low running temperatures of underfloor heating are ideal for renewable energy sources such as heat pumps. With Dynamic Energy Management you can maximise the energy-saving efficiency of your heat pumps.

The *Room Bypass* feature integrates with your heat pump. It lets you select one zone that will remain open when all others are closed. At other times, the selected zone functions normally: it plays its part in Auto-balancing.





A powerful yet simple linked system. Wireless freedom and plug-and-play connectivity.

Dynamic Energy Management requires just three components: thermostats, interface, and controllers. There's nothing that you won't have seen before. The key to the system is the industry-leading technology within the controller. But you're shielded from that. The straightforward interface leads you through set-up and activation. Once activated, Dynamic Energy Management runs itself.

Controller

The controller is at the heart of Dynamic Energy Management. It receives data from the thermostats and it controls the actuators. It keeps the system in constant balance based on temperature data and water flows.

The controller has built-in pump management to keep the pump in good working order at quiet times. For example, you can programme the pump to run for short exercise periods at specific times and dates during the summer.

You can have more than one controller in a home. Each interface manages up to three controllers, wired via data cables. The controller connected to the interface is the master, the other two are slaves. Each one takes data from up to 12 thermostats and controls up to 14 actuators.

Interface

You manage your underfloor heating through the interface. The controls are simple: arrows for up, down, left, and right, plus a central OK button. That's all you need to set up and maintain your heating.

Your interface manages up to three controllers, which equates to a maximum of 36 thermostats and 42 actuators. A low-battery warning alerts you when batteries need changing anywhere within the system.

Wireless thermostats

A wireless thermostat is silent, discreet, and stylish. With its infrared detector, it also senses warmth in the same way the human body does. Infrared thermostat is more accurate than one based on a thermistor or a bimetallic strip.

The LCD display shows the ambient or set temperature, while + and - buttons let you adjust the temperature. When locating thermostats, bear in mind that they are affected by the temperature of surrounding surfaces as well as that of the ambient air.

A low-battery warning gives you plenty of time to change batteries.



Uponor Digital Display Thermostat T-75

Uponor Controller C-56 with Uponor Interface I-76

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Uponor Controller C-56

Grey	1045567
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Uponor Interface I-76

Silver Glass Fascia	1046083
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Uponor Digital Display Thermostat T-75

White	1000502
Silver	1000504
Grey	1046114

Mounting Kit for Digital Display Thermostat T-75

Mounting Kit - White	1000503
Mounting Kit - Silver	1000505
Mounting Kit - Grey	1046115

Uponor Manual Thermostat T-55

White	1000527
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Uponor Public Thermostat T-54

White	1045572
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Uponor Remote Access Module R-56 - Available Winter '09

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Manual thermostat, T-55

Efficient wireless connection with low-battery warning via the interface. To adjust the temperature, turn the dial. A larger line marks the 21 °C position.



Public thermostat, T-54

Efficient wireless connection with low-battery warning via the interface. This is the thermostat for public locations where you don't want people to alter the room temperature. The dial is hidden behind a cover. Removal of the cover triggers an alarm. You can also connect external temperature sensors to the public thermostat.

Remote access module, R-56

If you choose it, the remote access module will connect your underfloor heating to your mobile phone. It's particularly useful for holiday homes. You can use it, for example, to switch your heating from economy mode to comfort mode a day before you arrive. The module can also be set up to text you details of your installation: status, indoor temperature, and outdoor temperature (if you have an external sensor).

You can even wire your home security system (window contacts, motion sensors, etc) to the remote access module via additional terminals.





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The contents of this brochure are provided for guideline only, please consult our technical manuals for full up-to-date information. The information in this publication is correct at the time of going to press.

Uponor reserves the right to alter specifications and operating parameters for all it's Underfloor Heating & Plumbing Systems at any time as part of it's policy of continuous product development.

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