

The Voice of Heating Controls



The Association of Controls Manufacturers

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Take control of energy use

TACMA director Colin Timmins explains why installers have an important role

Most people are now fully aware of the need to use less energy in their homes. Even if they haven't yet got the environmental message, rising fuel costs are a strong incentive to find ways to reduce consumption.

One of the biggest barriers householders say they face is a lack of information on what they should do and how to go about it.

The real problem, however, seems to be one of too much information, which confuses rather than informs. This is not surprising given the multitude of messages on ways to go green and, increasingly since the credit crunch, how to live more frugally.

With information on everything from low-energy lightbulbs and recycling to buying local produce and unplugging phone chargers, it's no wonder that people are confused over what they should do.

The message should be straightforward, since the single biggest thing most householders can do to reduce their home energy use is to improve their heating system.

Heating and hot water accounts for 84% of the energy used in UK homes, so people who are serious about reducing their energy use shouldn't start anywhere else.

This should also be much more of a priority for

government given a recent EU study which concluded that carbon emissions from gas and oil central heating boilers were equivalent to those from all road transport.

For those homeowners who want to make their heating and hot water more efficient, there are several options.

Insulation is usually the first step to take in reducing the amount of heat required for your home and to stop cylinder wastage.

A larger step would be replacing your boiler with a

more efficient model, or installing renewable energy appliances. This, however, requires a significant investment and may not be practical for most people, or very cost-effective if the boiler is not very old.

OVERLOOKED POTENTIAL

What is often overlooked is the potential to improve the overall system, and the heating controls in particular.

Improving controls can significantly reduce energy use, and they are a proven,

cost-effective technology.

In Ireland, information from the National Energy Agency claims "achieving control of the heating system is the most important aspect of energy conservation in a house".

This is not just rhetoric, as all householders in Ireland can get a grant of up to €500 for a heating controls upgrade.

In the UK, it seems that policymakers and the agencies providing information aren't up to speed in understanding the full potential for energy

Motor on control for energy saving

Sunvic Controls has supported Edinburgh's Sustainable Scotland public service event.

This was an opportunity to engage political decision makers, senior civil servants and social housing professionals, ensuring they recognise the importance of achieving national energy and carbon targets.

The company presented a masterclass with the theme 'how do you eat an elephant?' with a series of controls-related energy saving solutions to show that these demanding targets can only

be met by taking several small steps, or bites.

One contribution suggested by Sunvic introduced the use of motor-on motor-off (MOMO) technology for motorised valves. These valves only require electricity while they are opening or closing, while traditional spring-return valves require an electrical input all the time they are being held open to operate.

Energy usage varies, but if the average 'on' time of a spring-return actuator is 30 minutes, and each unit carries out 10,000 cycles per year, it

can consume 5,000 hours of energy per year at 5w - 25kw per year.

In comparison, a MOMO valve operating under the same conditions has a combined opening and closing time of 75 seconds. This equates to only 208 hours per year at 5w, which adds up to 1.04kw per year. Compared to spring-return valves, this is an energy saving of 96%.

This may be a small step, but it is another bite out of the elephant.

Sunvic MOMO valves are available in two-port or three-port mid-position versions. The MOMO actuator is a direct replacement for most traditional spring-return actuators.



MOMO technology can save energy

saving from better controls.

Perhaps they think there is not a problem given that controls are now required to be installed with new boilers under the Building Regulations.

TACMA has been working with the Energy Saving Trust to analyse data that the Trust collects on existing homes.

This shows that 70% of UK homes don't meet the minimum requirements for controls that apply for new heating systems (time-, temperature- and zone-control). It also shows there are nearly 8 million homes without a room thermostat.

This identifies a massive problem of poorly-controlled UK homes, and provides a great opportunity for carbon savings, with a possible annual reduction from these homes of over 4 million

tonnes of carbon dioxide.

This reduction is from existing technology, which is readily retrofitted (particularly with the advent of wireless controls) and gives householders a low-cost way to save energy and directly reduce their fuel bills.

INSTALLER OPPORTUNITY

These energy-saving measures could be a great opportunity for installers.

Optimising the efficiency of a heating and hot water system is rarely one-size-fits-all, and can require balancing and water treatment, as well as new controls, in order to achieve the best possible improvement.

What householders need is advice from a technical specialist who can appraise their system and recommend and deliver the best solution -

ideally the heating installer.

The installer's role would be helped with some official validation of the benefits of such improvements, and there are already steps being taken in this direction.

The Department for Communities & Local Government currently provides an energy efficiency checklist for home heating installations. There are also proposals in Brussels to extend the Energy Labelling Directive so that installers can label the efficiency of systems they install.

TACMA believes there are huge efficiency gains from targeting improvements to existing heating systems.

This would benefit consumers and the industry, as well as helping the UK government achieve its carbon reduction targets.

Programmer provides timely reminder

To comply with the Gas Safety (Installation & Use Regulations) 1998 and Part L of the Building Regulations, gas central heating boilers have to be serviced by properly-qualified personnel on an annual basis.

However, residential property landlords, local authorities, housing associations and the social housing sector sometimes experience problems in gaining access to their properties to undertake servicing.

For some years, Horstmann Controls' ServicePlus service interval programmers have

provided an answer by automatically shutting down the heating and hot water system once the boiler service period is overdue. Now, a new feature has been added.

This permits only a partial shutdown of the system, enabling a 15-minute period of water and central heating every hour, but never consecutively from one hour to the next.

The installer still has the option to set the ServicePlus so that a full shutdown can occur after a 28-day 'service overdue' warning period.

If programmed on installation using a unique key code, the 15-minute 'on' period option will reduce the effectiveness of the heating system so that it becomes uncomfortable for the

occupier while still providing some heating.

This should encourage the householder to call the service engineer to check the system.

Horstmann Controls' Paul Lovegrove said: "While we would still expect normal servicing to be undertaken by means of a pre-arranged appointment, ServicePlus provides a fail-safe if the householder does not respond to requests to maintain the boiler service schedule."

The new 15-minute option has been developed in response to requests from landlords who feel it provides a more user-friendly reminder to the householder to cooperate with the service provider.

In all other respects, the ServicePlus range has the same features of Horstmann's CentaurPlus electronic programmer range.



Horstmann's ServicePlus S27R

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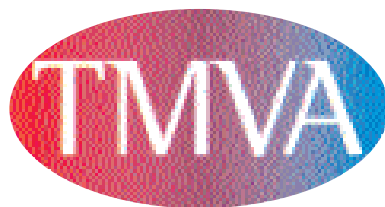
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Controlling legionella in the health sector

The control of legionella in hot water systems in health sector buildings is an area currently being discussed in a variety of media.

A range of different 'expert' solutions are being suggested, with each claiming to provide the best answer. Ultimately, this approach only results in creating confusion among system designers.

This topic is particularly relevant at the moment, as the associated Health Technical Memorandum (HTM04-01 The control of legionella, hygiene, safe hot water, cold water and drinking water systems) is being reviewed.

It is anticipated that the review and any associated revisions to HTM04-01 will be completed by April 2010.

A lot of the discussion concerning this issue is focusing on the use of copper and silver ionisation as an alternative to the preferred use of a thermal control solution in health sector buildings.

Following recent claims and counter-claims from respective champions of each technology, the Thermostatic Mixing Valve Manufacturers' Association (TMVA) believes there is a need for the facts to be presented in a clear, unequivocal and substantiated fashion.

It is important to note that the current version of HTM04-01 does not preclude the use of silver and copper ionisation systems and, in many cases, it does have its uses as an additional level of protection.

However, using temperature control remains the preferred solution for most system designers because it is safe, reliable and well understood by designers and associated maintenance and installation staff.

Controlling the hot water system with heat means you know immediately if something goes wrong as there will be no hot water. This facilitates a prompt

repair and provides a clear indication as to when the system is back up and running.

TMVs are a mature, proven, reliable solution, with third-party accreditation to an NHS model engineering specification and a British Standard.

While TMVs are not the controller of legionella, they do allow systems to be controlled by temperature. Whether temperature or water treatment is used, poor system design and/or maintenance will result in bacteria breeding inside the system (through dead legs, scale, and system debris).

The TMVA believes temperature is the best way to ensure bacteria is killed, as specified in L8 and HTM04.

HTM04's premise is to keep hot water hot, and cold water cold. The temperature of hot water, 60°C, has been around for some time and, historically, is nothing to do with fighting legionella.

Instead, it has been specified because hot water should be hot, and controlled down to lower temperatures where people are at risk.

Due to the current confusion, the TMVA has developed a set of myth-and-fact based responses to the most common questions.

We believe that these will set the record straight as to why temperature control will continue to be the predominant, and preferred, technology for the control of legionella in health sector buildings.

The questions and their associated responses can be accessed online at www.beama.org.uk/tmva-q&a. This will help system designers and maintenance engineers to understand the issues related to hot water provision better. In the health sector in particular, it will help them make the correct, fact-based choices to ensure the ongoing safety of patients and staff.