

## Guidance on how to comply with the 2013 Building Regulations Part L

Version 1.0 – 6 April 2014

This guide supports the official guidance covering the control of gas and oil fired wet central heating installations in domestic premises under the revised Building Regulation Part L1 for England, which came into force from 6 April 2014.

Following the recommended system layouts in this document will provide confidence that designs and installations are in accordance with the guidance and therefore comply with the relevant parts of the Building Regulations. Underfloor heating systems are covered in the BEAMA Underfloor Heating guide to Part L.

For further information contact BEAMA Heating Controls via email: [BRegs@beama.org.uk](mailto:BRegs@beama.org.uk)

This guide has been prepared by members of BEAMA Heating Controls (formerly TACMA), the association for UK manufacturers and suppliers of electrical and electronic controls and switches used in appliances, heating systems and general purpose applications. Its members are Danfoss, Drayton, Honeywell, Horstmann, Myson, Pegler Yorkshire, and Siemens.

BEAMA Heating Controls is dedicated to advancing controls for domestic installations to ensure a comfortable environment at the least cost. BEAMA, Westminster Tower, 3 Albert Embankment, London, SE1 7SL

### New for 2013

1. The requirement for dwellings under 150m<sup>2</sup> to have at least two heating zones has now been removed. To provide zone control in such dwellings TRVs (Thermostatic Radiator Valves) should be provided on all radiators (except the room with the room thermostat) on new systems. It is also good practice to install TRVs when replacing a boiler in an existing system as it is convenient and timely to do this while the system is drained down.
2. The Domestic Building Services Compliance Guide now contains specific recommendations for minimum standards when only a part, or parts, of an existing system are being replaced.

Recent research at the University of Salford showed that adding a room thermostat and TRVs to a heating system reduced running costs by up to 40% as well as ensuring that the system operates effectively to deliver comfortable temperatures in every room. Every opportunity should therefore be taken to ensure that all homes in the UK have effective controls, whether their boiler is being replaced or not. More details at

[www.beama.org.uk/heatingcontrols](http://www.beama.org.uk/heatingcontrols).

## Quick Guide - Recommended Minimum Standards for Control of New Heating Systems

<b>Dwelling over 150m<sup>2</sup></b> <sup>1</sup>	<b>With hot water cylinder</b>	Boiler interlock <sup>2</sup>
		At least two space heating circuits <sup>3</sup> , each with independent time control, a room thermostat and TRVs <sup>4</sup>
		A hot water circuit with independent time control and a cylinder thermostat
	<b>No hot water cylinder</b>	Boiler interlock
At least two space heating circuits, each with independent time control, a room thermostat and TRVs		
<b>Dwelling up to 150m<sup>2</sup></b>	<b>With hot water cylinder</b>	Boiler interlock
		A space heating circuit with independent time control, a room thermostat and TRVs
		A hot water circuit with independent time control and a cylinder thermostat
	<b>No hot water cylinder</b>	Boiler interlock
A space heating circuit with independent time control, a room thermostat and TRVs		

### Customer information

It is also a requirement in the building regulations to provide users with information on how to use their controls to reduce energy consumption. This should ensure that the customer is able to operate the specific controls that have been installed and to leave the operating instructions with them. It should also help them understand the best way to use the controls to maintain comfort and minimise energy use. A detailed guide to use of controls is available to download from [www.beama.org.uk/heatingcontrols](http://www.beama.org.uk/heatingcontrols) and this can be left with customers.

For new systems the regulations suggest that a set of operating and maintenance instructions should be left with the occupants in a durable and easily understood format.

<sup>1</sup> A 2006 report by Nationwide showed that most four-bedroom detached houses fall into this category with the average floor area of such properties being 157m<sup>2</sup> (the average for five-bedroom detached was over 200m<sup>2</sup>.) Older houses can be larger than modern ones, with the average of all pre-war detached homes being over 150m<sup>2</sup>.

<sup>2</sup> Boiler interlock means that controls are wired so that when there is no demand for space heating or hot water the boiler and pump are switched off. Use of TRVs alone does not provide interlock.

<sup>3</sup> Each heating circuit will form separate heating zone in the dwelling. One zone must cover the 'living area' and heating zones will often be divided to cover 'living' and 'sleeping' areas, or upstairs and downstairs. There are usually significant opportunities for energy saving by matching zones to the lifestyle of occupants (for example with home offices) and installers should look for opportunities to set up zones beyond the minimum requirements.

<sup>4</sup> It would also be acceptable for each heating circuit to be controlled by individual networked radiator controls in each room on the circuit.

## Quick Guide - Recommended Minimum Standards for Control When Replacing Components of Heating Systems

Replacement boiler <sup>5</sup>	<b>With hot water cylinder</b>	Gravity-fed systems upgraded to fully pumped.
		Boiler interlock
		Maintain existing space heating circuit(s), each with independent time control and a room thermostat. TRVs strongly recommended.
		A hot water circuit with independent time control and a cylinder thermostat
<b>No hot water cylinder</b>	Boiler interlock	
	Maintain existing space heating circuit(s), each with independent time control and a room thermostat. TRVs strongly recommended.	
New heating system with existing pipework <sup>6</sup>	<b>With hot water cylinder</b>	Gravity-fed systems upgraded to fully pumped.
		Boiler interlock
		Maintain existing space heating circuit(s), each with independent time control, a room thermostat and TRVs
		A hot water circuit with independent time control and a cylinder thermostat
<b>No hot water cylinder</b>	Boiler interlock	
	Maintain existing space heating circuit(s), each with independent time control, a room thermostat and TRVs	
Radiator replacement	<b>Emergency</b>	Good practice to fit a TRV to the replacement radiator(s) if in a room without a room thermostat
	<b>Planned</b>	Good practice to fit TRVs to all radiators in rooms without a room thermostat
Hot water cylinder <sup>7</sup>	<b>Emergency</b>	A cylinder thermostat.
	<b>Planned</b>	Boiler interlock
		A hot water circuit with independent time control and a cylinder thermostat

### Customer information

It is also a requirement in the regulations to provide users with information on how to use their controls to reduce energy consumption. This should ensure that the customer is able to operate the specific controls that have been installed and to leave the operating instructions with them. It should also help them understand the best way to use the controls to maintain comfort and minimise energy use. A detailed guide to use of controls is available to download from [www.beama.org.uk/heatingcontrols](http://www.beama.org.uk/heatingcontrols) and this can be left with customers.

### Controls upgrades in existing homes

While upgrades to controls in existing heating systems, other than at times of boiler replacement, are not specifically required under the building regulations it is good practice for all homes to have a set of controls that at least complies with the minimum standards in the Building Regulations – a boiler interlock, room thermostat, programmer, thermostatic radiator valves and a hot water cylinder thermostat. These will help to ensure that the existing heating system is not operating inefficiently and allow the occupants to make further reductions in their energy costs through behaviour change.

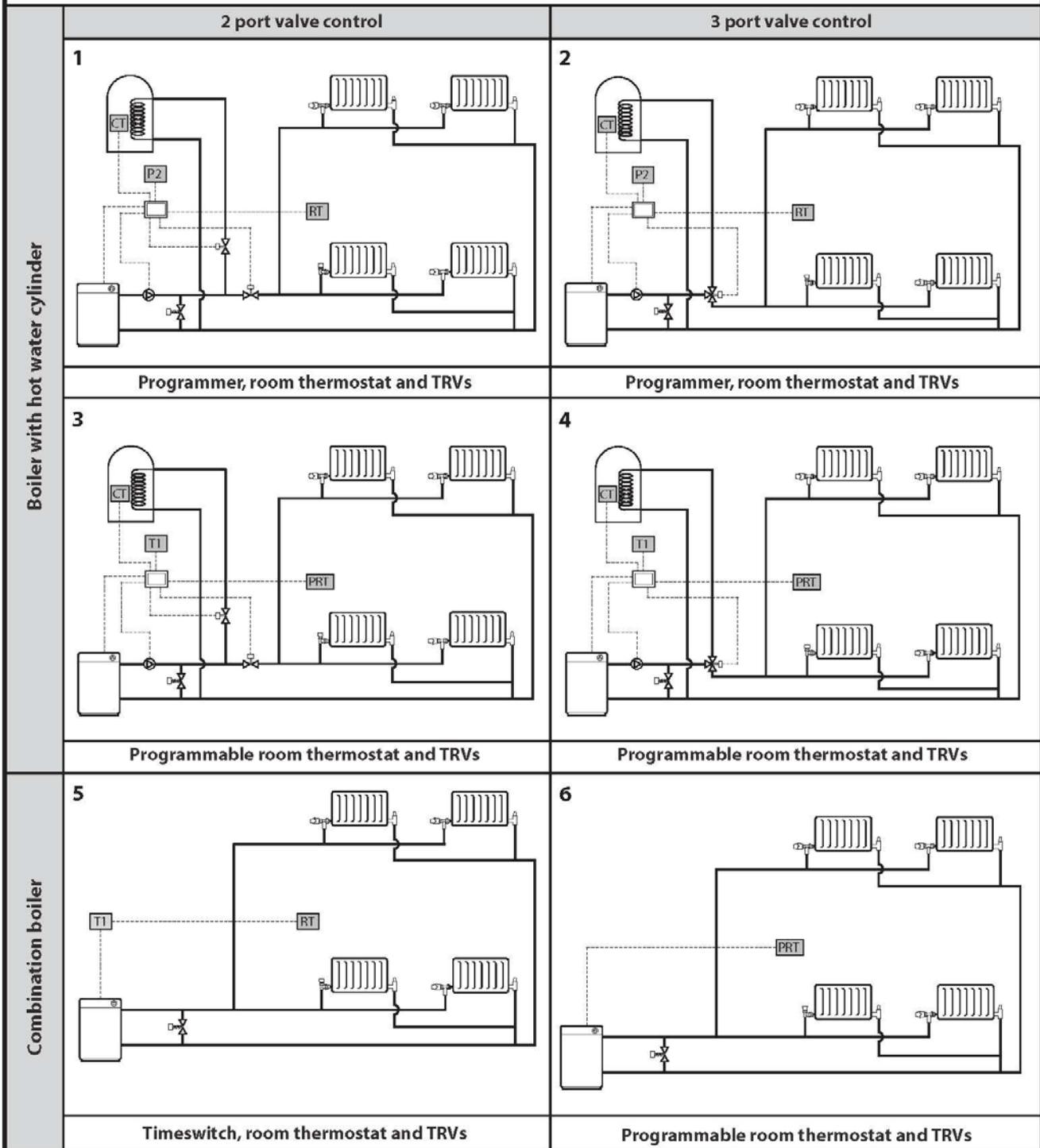
Heating installers should recommend controls upgrades as required to meet these standards when visiting homes for maintenance and repairs. UK Government is committed to reducing energy use in homes and householders should be reminded around 80% of energy use in homes is from heating and hot water. Wireless controls are a convenient choice for controls upgrades; allowing ease of installation and minimal disruption by reducing the requirement for wiring runs.

<sup>5</sup> TRVs are only recommended as good practice with replacement boilers but BEAMA Heating Controls strongly recommend that the opportunity is taken to install these when the system is drained down to ensure effective control of the heating system

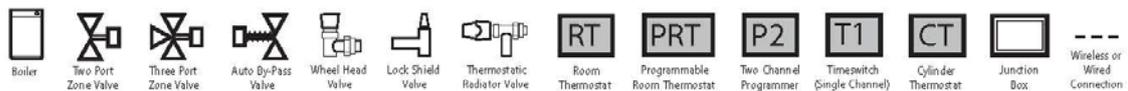
<sup>6</sup> For dwellings over 150m<sup>2</sup> it is recommended as good practice to upgrade to at least two space heating circuits if only one currently exists.

<sup>7</sup> Good practice to upgrade gravity-fed systems to fully pumped, and to install a separate hot water circuit with independent timing even in emergency situations.

Example layouts for new systems in dwellings up to 150m<sup>2</sup> and for replacement boilers in all dwellings to ensure compliance.



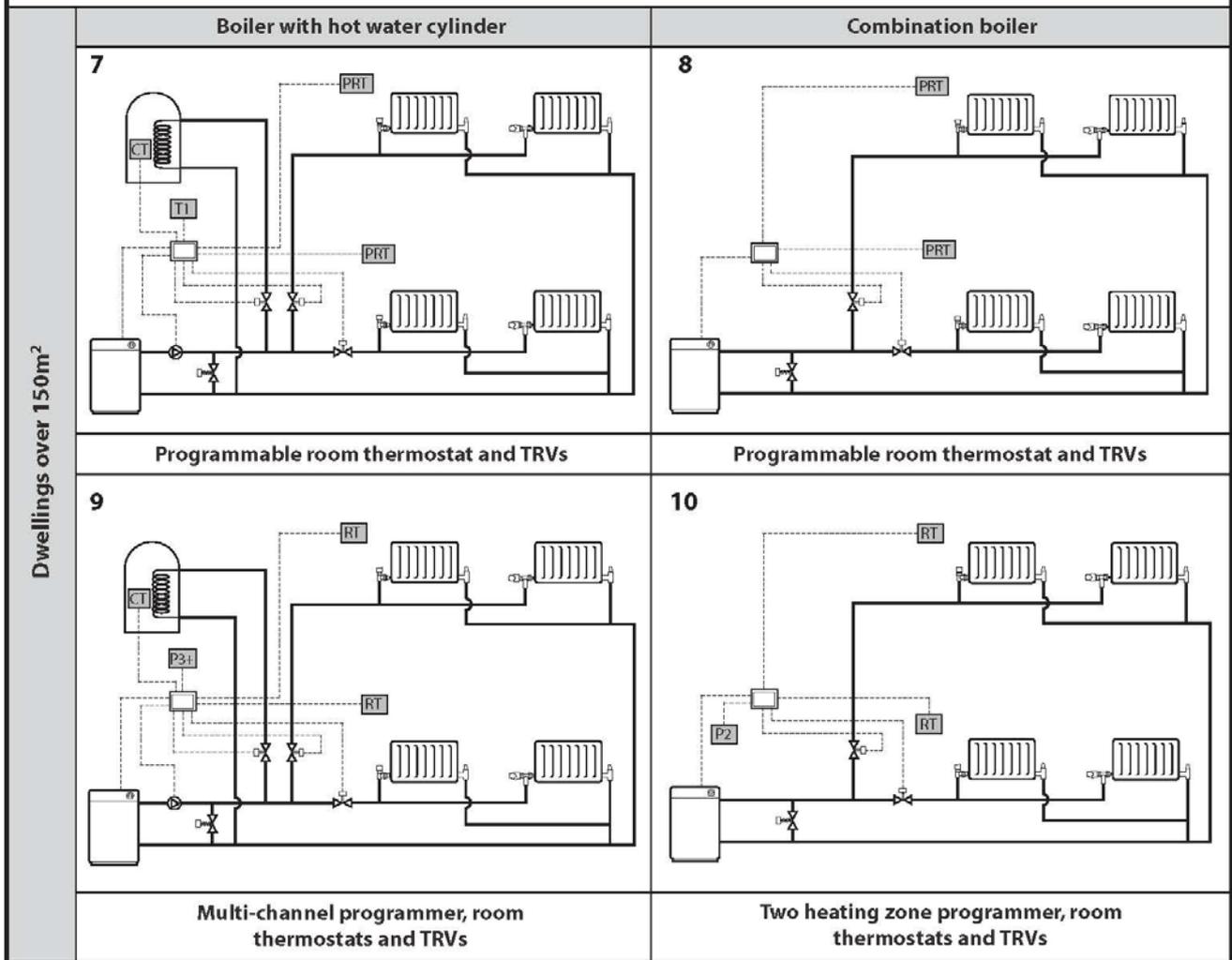
KEY TO SYMBOLS



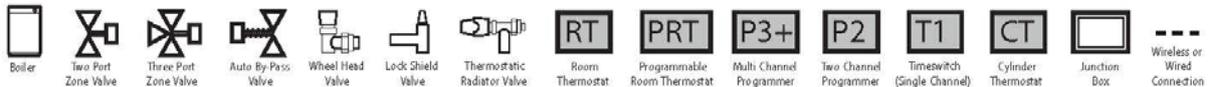
NOTE

It is defined good practice to fit thermostatic radiator valves to all radiators when the system is drained down. TACMA recommends that this should always be done unless the type of existing radiators or pipework layouts makes it impractical.

Example layouts for **new systems in dwellings over 150m<sup>2</sup>** to ensure compliance.



KEY TO SYMBOLS



NOTES

- Systems specified for dwellings over 150m<sup>2</sup> will also satisfy compliance for smaller dwellings.
- Where zone valves are installed in smaller dwellings it is always recommended that both time and temperature control of zones are applied. This can be done for little additional cost but provides far more flexible control options for the occupants.
- All of these systems are preferable approaches where only the boiler is replaced. However pipework changes can incur significant additional work in existing homes so the simplified example layouts for replacement boilers will meet compliance in such circumstances.