Control Packs
Catalogue

Including control packs
compliant with
2013 Building Regulations: Part L

ENGINEERING
TOMORROW

Danfoss

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Efficient lean production facility

State of the art, temperature controlled auto assembly cell

On-site product testing laboratory used internally and externally for product validation and research

Contents

What's **Changed** in 2013 Building Regulations - **Part L?**

Introduction to **2013 Building Regulations: Part L**
What's changed? And how to comply…

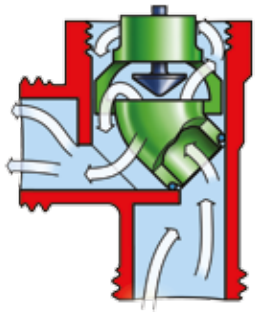
From the 6th April 2014, a revised version of Part L Building Regulations came into force. There have been some minor changes to the previous version, the requirements are:

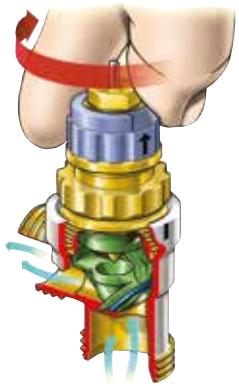
1. The requirement for dwellings under 150m^2 to have at least two heating zones has now been removed. To provide zone control in such dwellings TRVs (Thermostatic Radiator Valves) should be provided on all radiators (except the room with the room thermostat) on new systems. It is also good practice 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, the following are considered good practice:

   i. **Hot Water Cylinder** - Install a boiler interlock and separate timing for space heating and hot water
   ii. **Boiler** - Fit individual radiator controls such as TRV's on all radiators except those in the room with a room thermostat
   iii. **Radiator** - Fit individual radiator controls such as TRV's on all radiators except those in the room with a room thermostat
   iv. **New heating system – existing pipework retained** - Minimum standard to fit individual radiator controls such as TRV's on all radiators except those in the room with a room thermostat

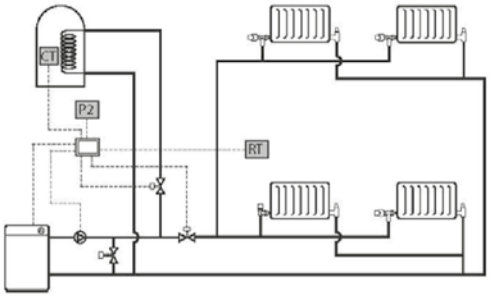
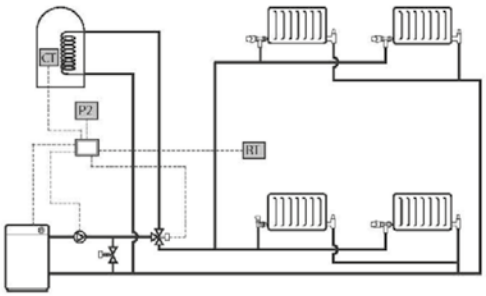
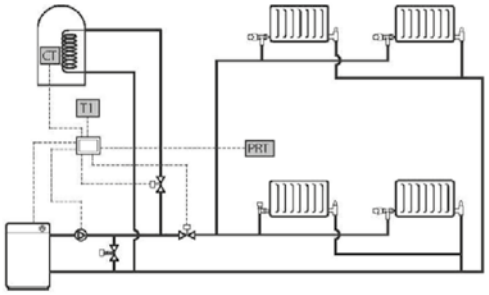
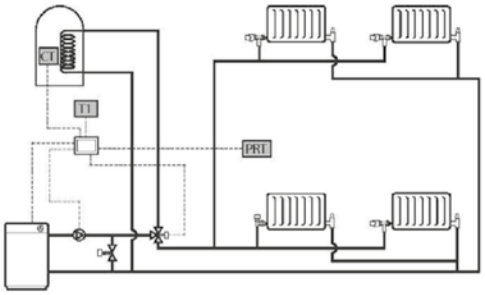
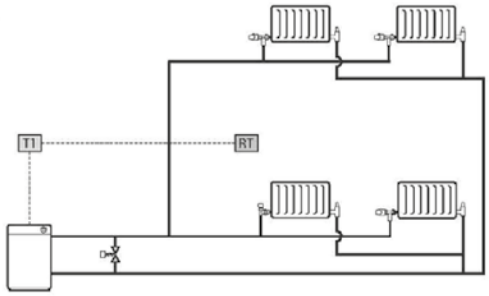
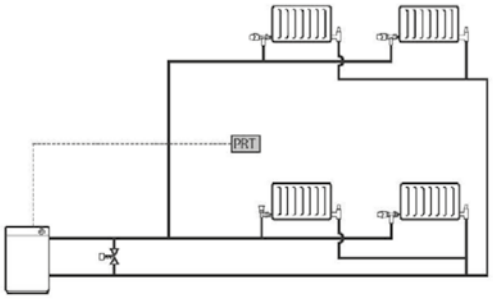
Recent research at the University of Salford showed that adding a room thermostat and TRVs to a heating system reduced the running costs by up to 40% as well as ensuring that the system operates effectively to deliver comfortable temperatures in every room. Every opportunity should therefore be taken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

The Danfoss range of TRVs make the job of upgrading radiator valves on a system easier. All Danfoss TRVs are bi-directional with a flow direction selection feature.
Thanks to the rotating insert within the valve, the flow direction through the valve can be changed without the need to remove it, ensuring the water flows through the valve in the correct direction and thereby eliminating the risk of water hammer.

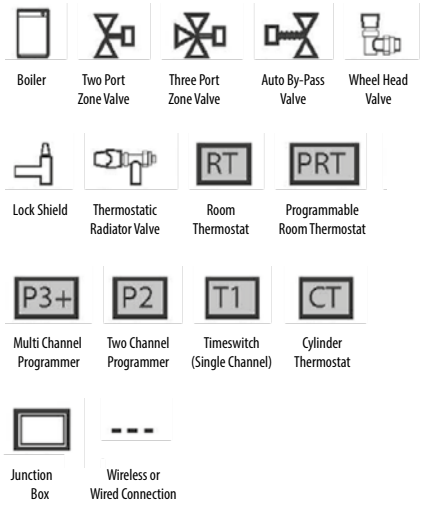




Example layouts for **new systems in dwellings up to 150m²** and for **replacement boilers in all dwellings** to ensure compliance

	2 Port Valve Control	3 Port Valve Control
Boiler with Hot Water Cylinder	**Programmer, Room Thermostat and TRVs**	**Programmer, Room Thermostat and TRVs**
		
	Programmable Room Thermostat and TRVs	**Programmable Room Thermostat and TRVs**
		
Combination Boiler	**Timeswitch, Room Thermostat and TRVs**	**Programmable Room Thermostat and TRVs**
		

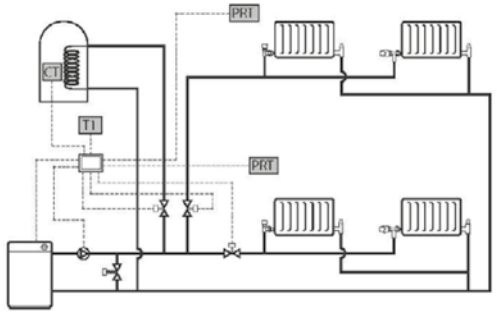
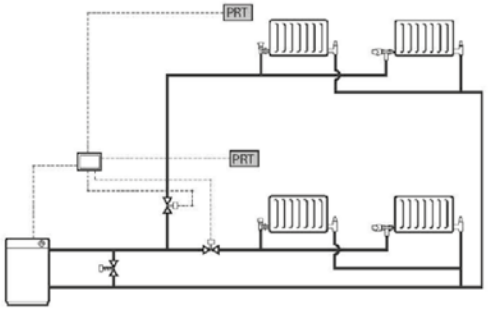
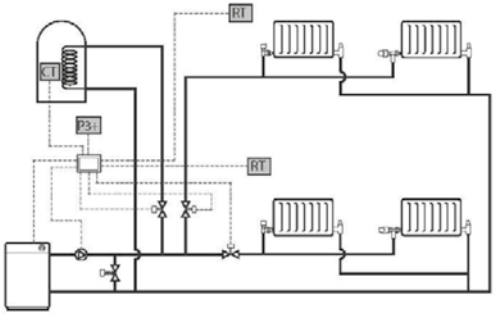
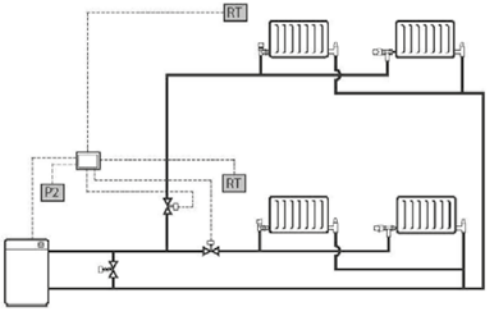
Key to Symbols



Notes:

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

Example layouts for **new systems in dwellings over 150m²** to ensure compliance

Dwellings over 150m²	Boiler with Hot Water Cylinder	Combination Boiler
	Programmable Room Thermostat and TRVs	**Programmable Room Thermostat with TRVs**
		
	Multi-Channel Programmer, Room Thermostat and TRVs	**Two Heating Zone Programmer, Room Thermostat and TRVs**
		

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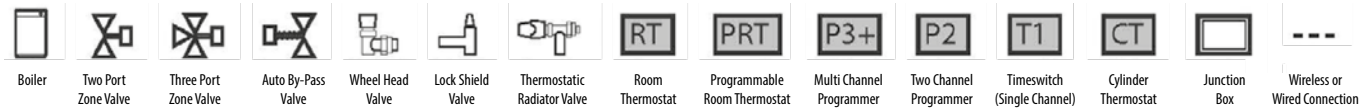


Notes:

- Systems specified for dwellings over 150m² 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.

TP5000Si (Service Interval Feature)
5-2 day programmable thermostat offering 2, 4, or 6 events per day. With energy saving chrono-proportional control to reduce operating costs.

TS715Si (Service Interval Feature)
Single channel timeswitch with backlit display plus factory preset clock with automatic BST/ GMT time change.

Control Packs
Product Overview

RET230P
The RET230P electronic room thermostat has a discreet design with first class control accuracy and energy efficiency.

RET1000MS
The RET1000 electronic room thermostat features stylish backlit LED icons that provide clear indication of power and output status.

RET2000MS
The RET2000 is a digital room thermostat with an easy to read display, clearly showing the room temperature and output status of the thermostat.

CET2000B-RF and RX1-S Receiver
A wireless hot water cylinder thermostat. A strap on sensor connects to the control unit to wirelessly send signals to the RX receiver unit.

TP5000Si-RF (Service Interval Feature)
Building on the ease of use of the hard wired TP5000Si, the TP5000Si-RF is a wireless version enabling positioning anywhere in the house.

RET2000B-RF and RX1-S Receiver
A wireless digital room thermostat with an LCD temperature display. RX receiver activates the motorised valves when there is a call for heat.

ATC
An electro-mechanical surface mounted cylinder thermostat with cable strain relief and a simple fitting to attach to the cylinder.

WC4B
The WC4B wiring centre provides a systemised and tidy approach to wiring.

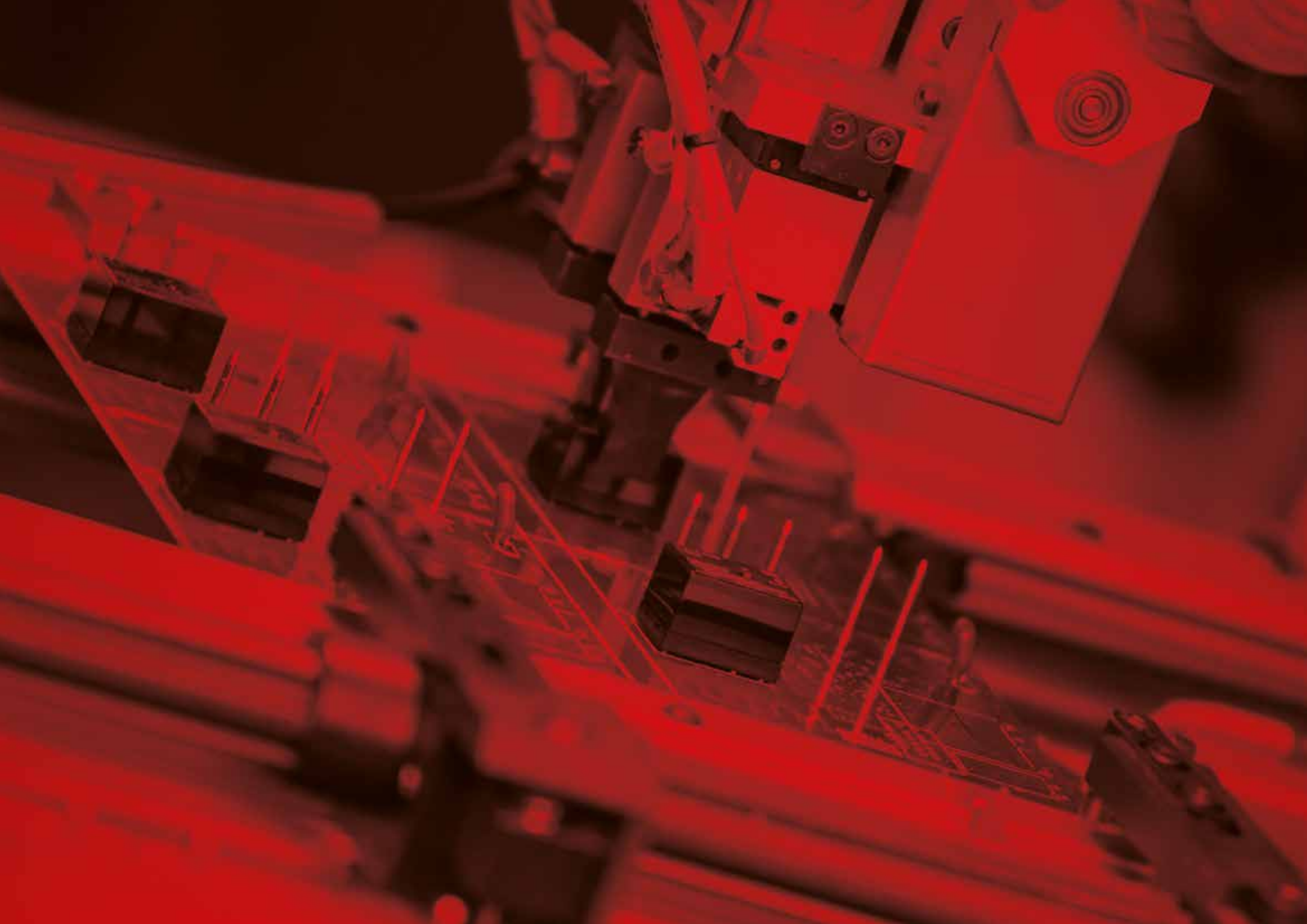
FP715Si (Service Interval Feature)
Two channel programmer with independent HW and CH times plus a factory pre-set clock with automatic BST/GMT time change.

FP735Si (Service Interval Feature)
Full three channel programmer with 7 day, 5-2 day or 24 hour operation.

HP22/HS3
All Danfoss motorised valves are designed to be long lasting and reliable.

*** TRV Combi Pack**
Combines a sensor with the RA-FS 'revolver' valve. The patented 'revolver' feature allows installation in either the flow or return.

**** TRVs are not supplied within the packs but can be purchased separately from your local merchant.***



2013 Building Regulation - Part L

Compliant Packs

2013 Building Regulation - Part L Control Packs for **Vented Systems**

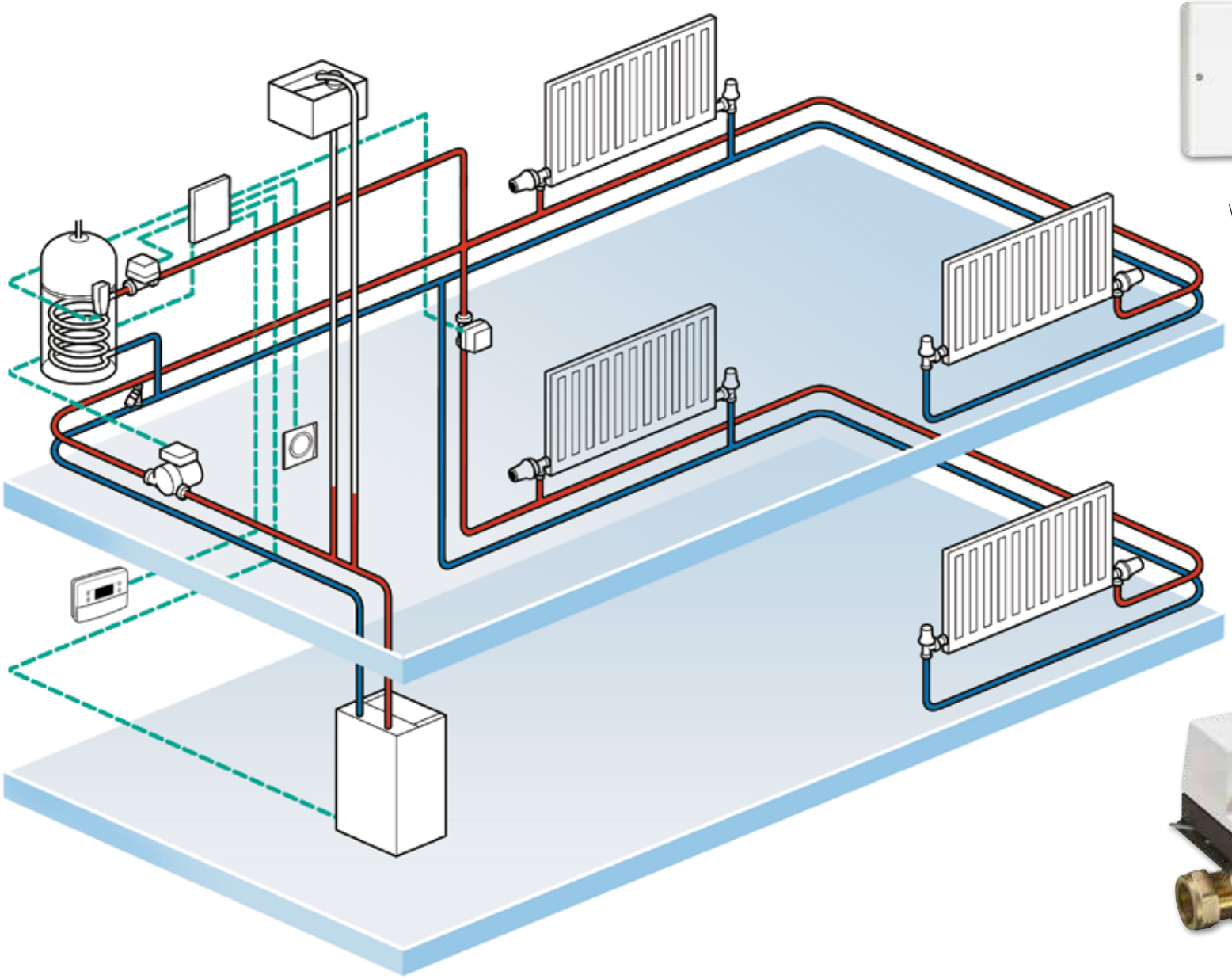
2 Zone Pack

Independent timing for CH and DHW - Dial Room Thermostat

1 x FP715Si
Two channel full programmer

1 x RET1000MS
Electronic Room Thermostat

1 x ATC
Cylinder Thermostat

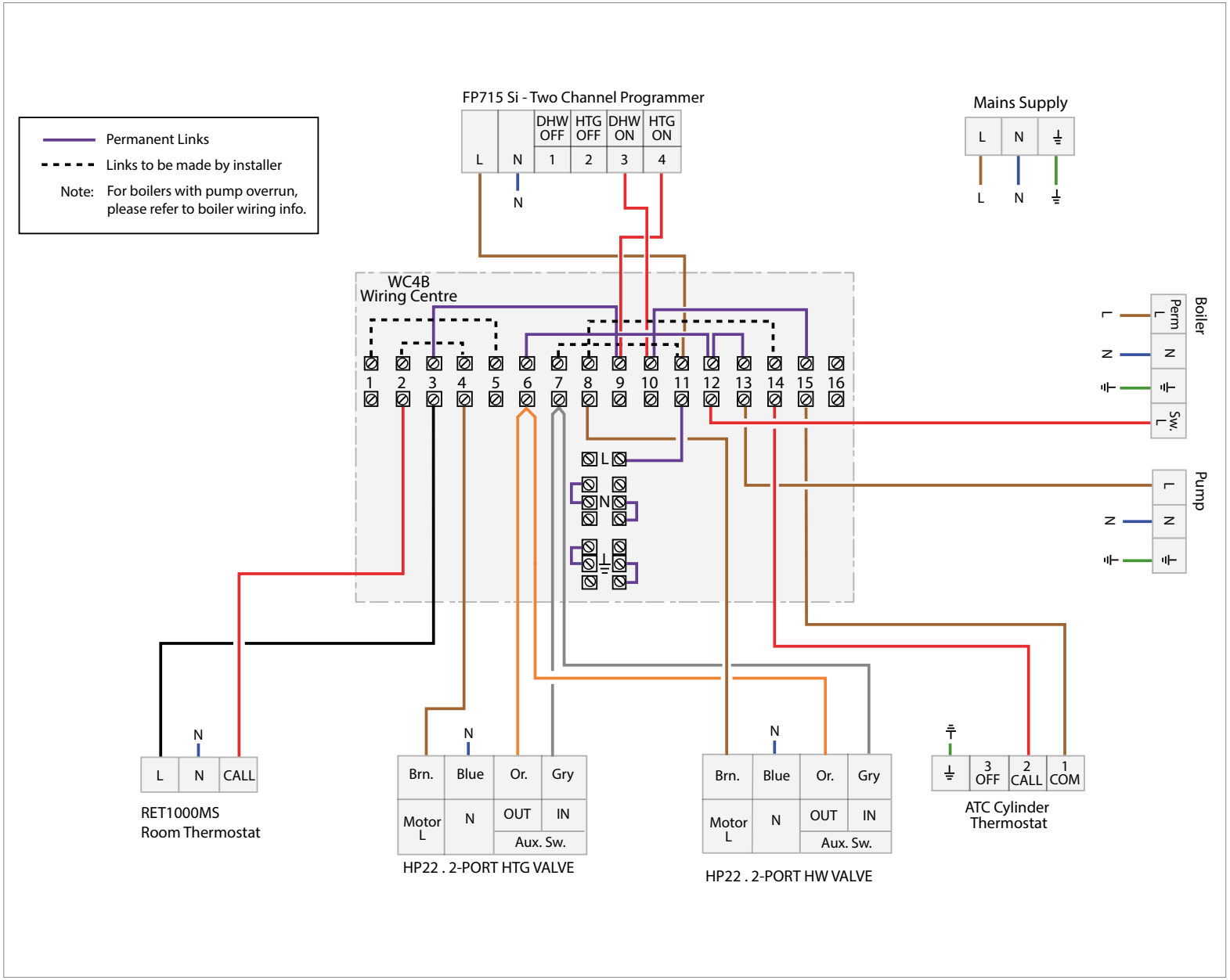


1 x WC4B
Wiring Centre

2 x HP22
Two port valve

(Dwellings up to 150m²)

Code Number **087N8500JG**



Providing separate times for heating and hot water, this pack fulfils the minimum control requirements for dwellings under 150m² using a vented hot water cylinder.

The **FP715Si** two channel timer is used to provide time control for the heating and hot water zones.

A dial setting **RET1000MS** thermostat provides the customer with a high level of space heating comfort and control accuracy with the added benefit of chrono-proportional control which can provide up to 10% CO^2 and cost savings when compared to a standard mechanical thermostat.

Hot water control is achieved using an **ATC** cylinder thermostat which is easy to install and set.

This pack is ideal for installations using a standard hot water cylinder.

Potential savings with chrono-proportional control:

Control	Energy Saving (%)	Carbon Saving (%)
Mechanical On/Off	-	-
Electronic On/Off	**2.10**	**2.31**
Chrono-Proportional	**10.35**	**10.71**

Results based on a high efficiency condensing boiler over a 12 hour period.

Please Note:
To save energy and increase comfort, TRVs should also be fitted on all radiators in rooms without room thermostats.

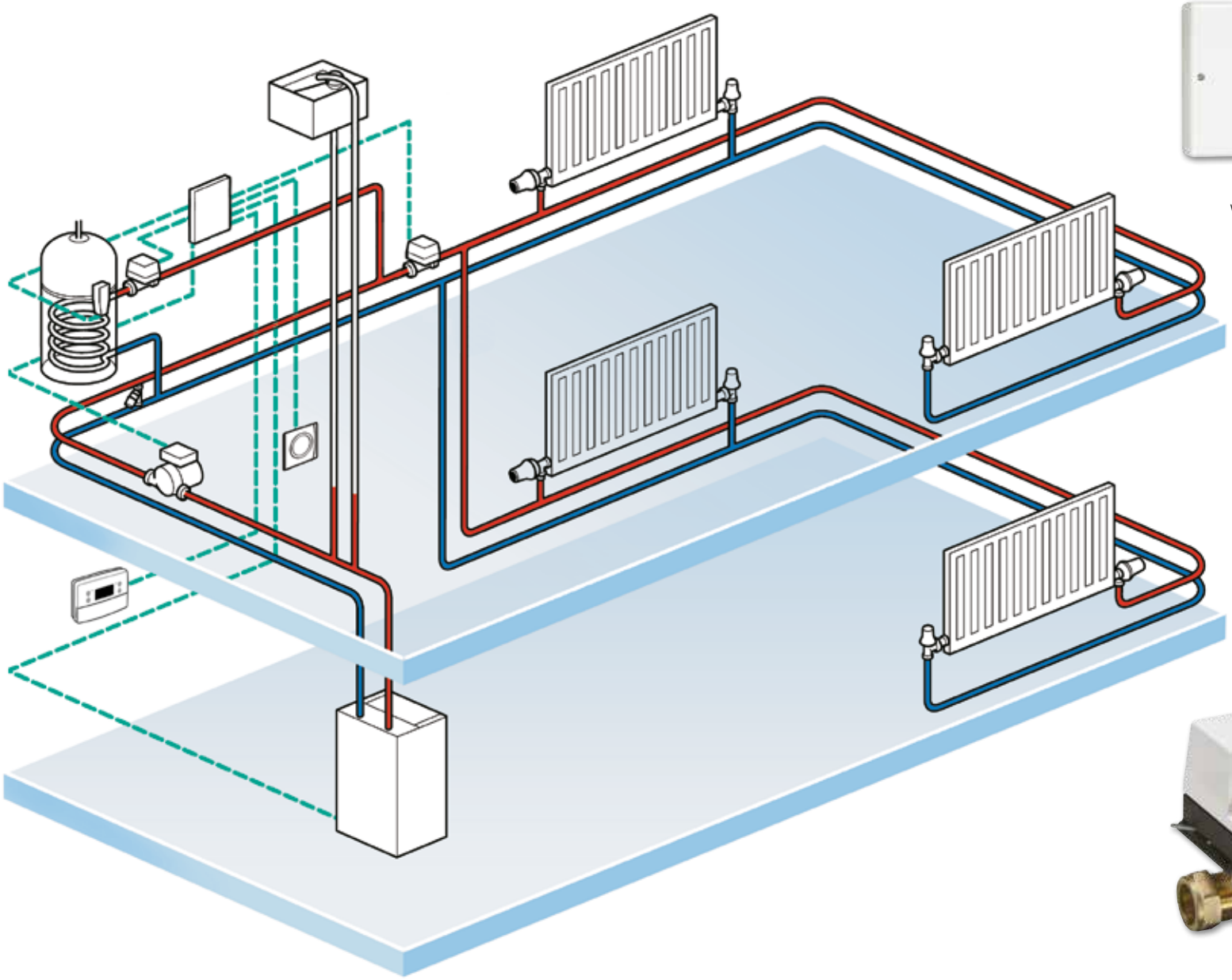
2 Zone Pack

Independent timing for CH and DHW - Digital Room Thermostat

1 x FP715Si
Two channel full programmer

1 x RET2000MS
Electronic
Room Thermostat

1 x ATC
Cylinder Thermostat

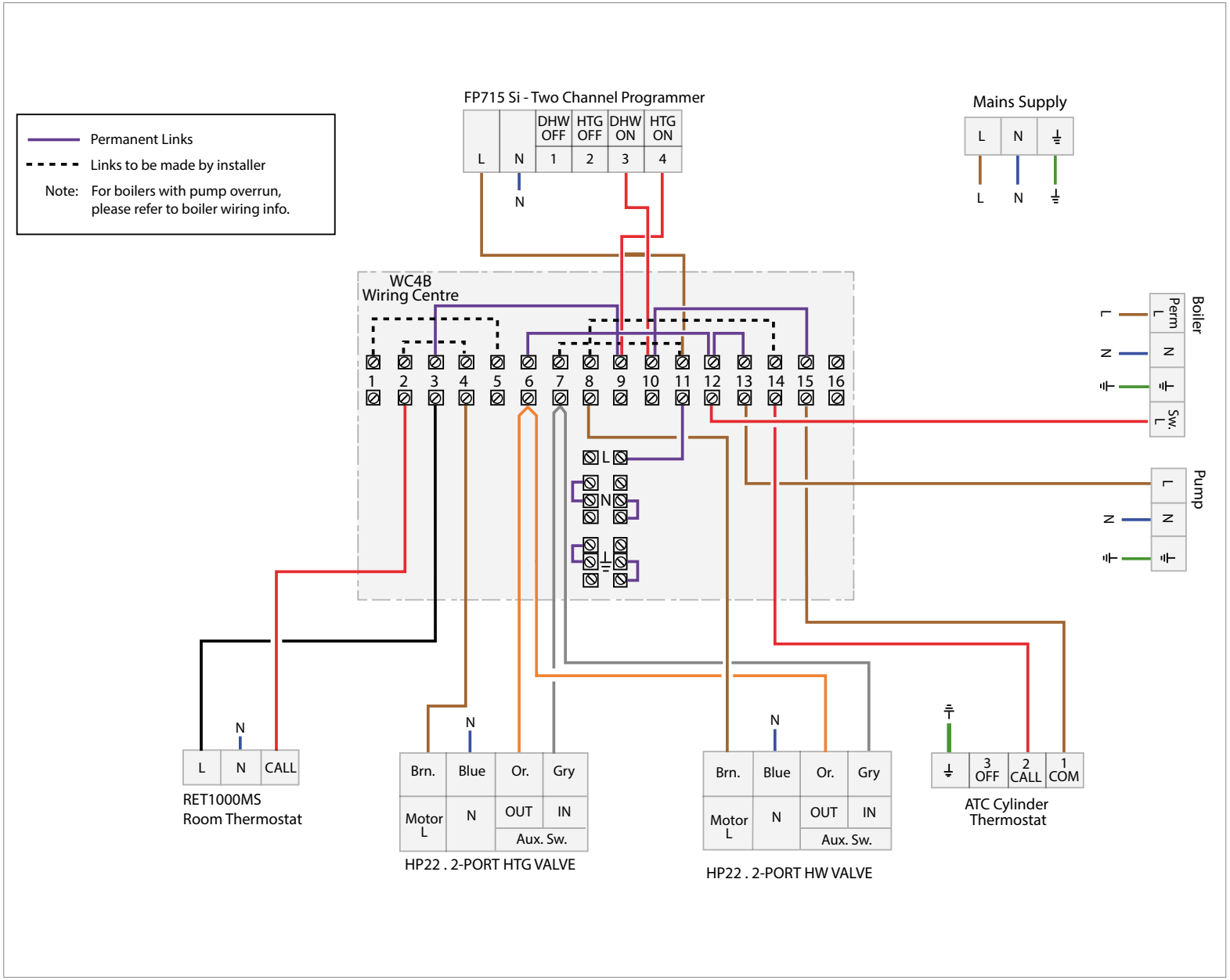


1 x WC4B
Wiring Centre

2 x HP22
Two port valve

(Dwellings up to 150m²)

Code Number **087N8500KE**



Providing separate times for heating and hot water, this pack fulfils the minimum control requirements for dwellings under 150m² using a vented hot water cylinder.

The **FP715Si** two channel timer is used to provide time control for the heating and hot water zones.

A digital setting **RET2000MS** thermostat provides the customer with a high level of space heating comfort and control accuracy with the added benefit of chrono-proportional control which can provide up to 10% CO^2 and cost savings when compared to a standard mechanical thermostat.

Hot water control is achieved using an **ATC** cylinder thermostat which is easy to install and set.

This pack is ideal for installations using a standard hot water cylinder.

Potential savings with chrono-proportional control:

Control	Energy Saving (%)	Carbon Saving (%)
Mechanical On/Off	-	-
Electronic On/Off	**2.10**	**2.31**
Chrono-Proportional	**10.35**	**10.71**

Results based on a high efficiency condensing boiler over a 12 hour period.

Please Note:
To save energy and increase comfort, TRVs should also be fitted on all radiators in rooms without room thermostats.

2 Zone Pack

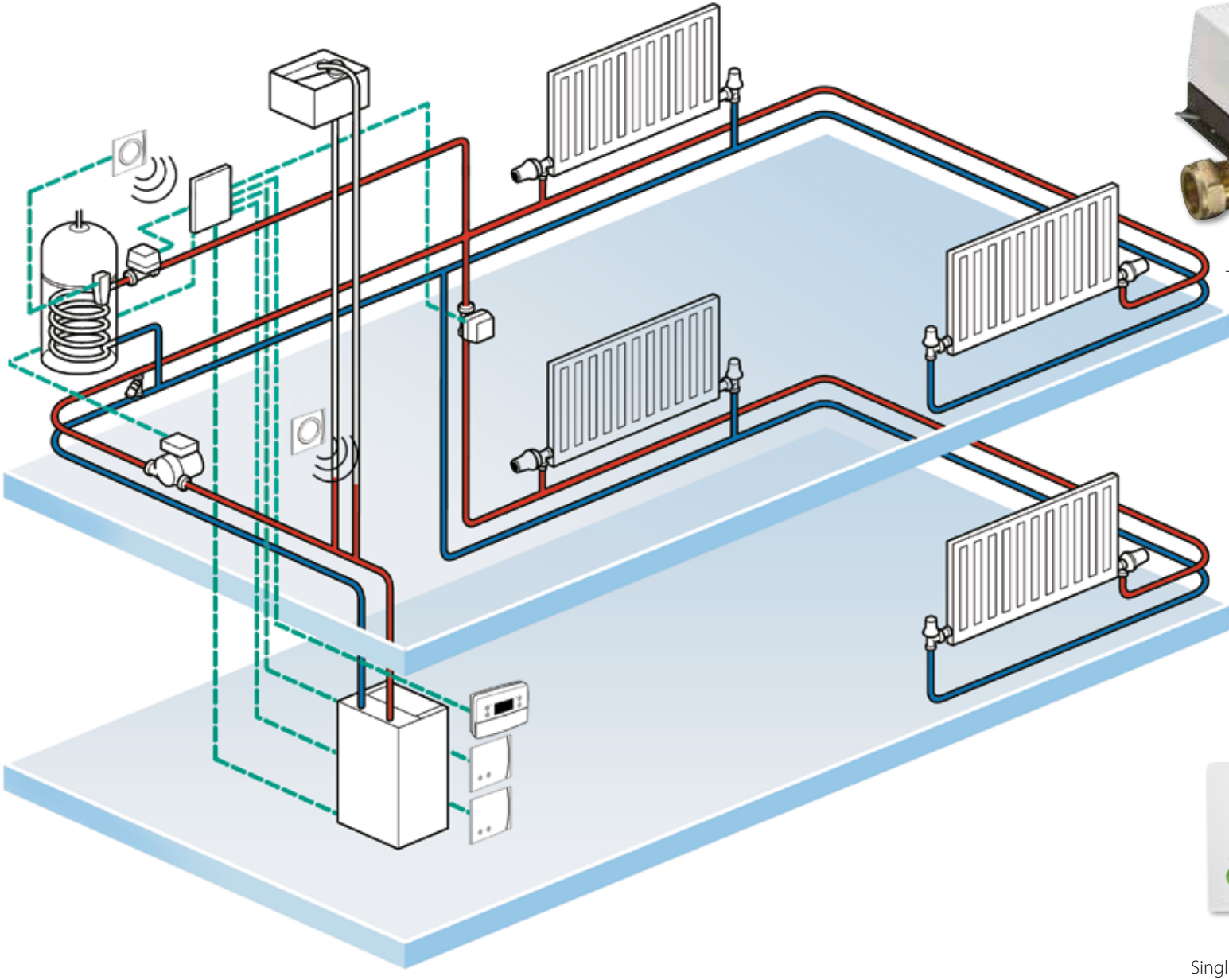
Independent Timing for CH and DHW - Wireless System

1 x FP715Si
Two channel full programmer

1 x RET2000B-RF
Wireless Electronic
Room Thermostat

1 x CET2000B-RF
Wireless Cylinder Thermostat

WC4B
Wiring Centre

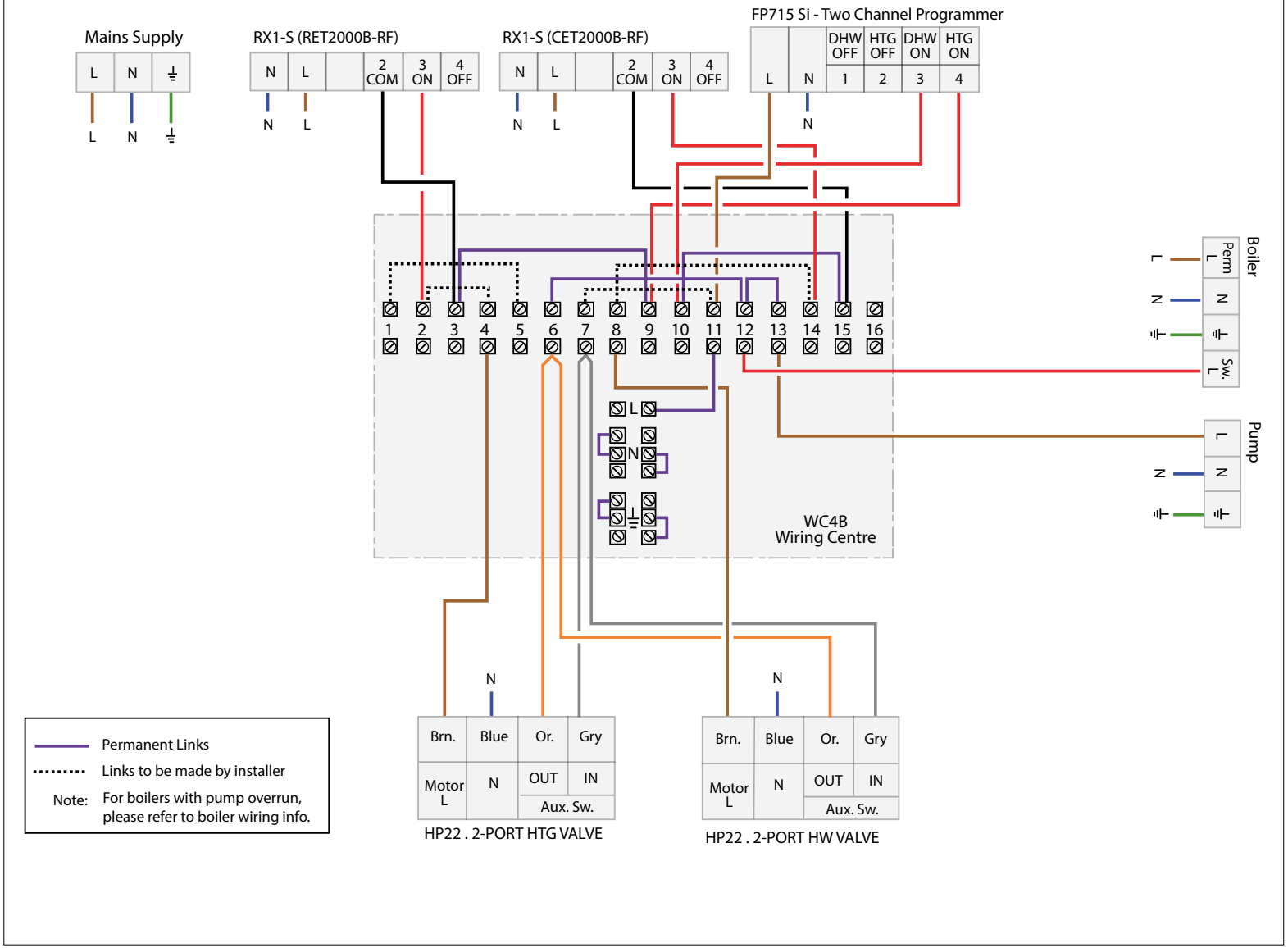


2 x HP22
Two port valve

2 x RX1-S
Single Channel Receiver

(Dwellings up to 150m²)

Code Number **087N6500V4**



A wireless solution for systems with a vented hot water cylinder providing a separate timebase for heating and hot water control.

Ideal for situations where running wires is difficult or impossible, the wireless packs provide ease of installation as well as a simple setup with reliable operation.

The **FP715Si** programmer provides a timebase for heating and hot water, while the **RET2000B-RF** and the **CET2000B-RF** provide wireless heating and hot water temperature control respectively.

All Danfoss wireless products use a secure digital radio communication system to ensure reliability and eliminate the possibility of interference with other wireless devices in the home.

This pack is ideal for installations using a vented hot water cylinder where fixed wiring is impractical and undesirable.

Potential savings with chrono-proportional control:

Control	Energy Saving (%)	Carbon Saving (%)
Mechanical On/Off	-	-
Electronic On/Off	**2.10**	**2.31**
Chrono-Proportional	**10.35**	**10.71**

Results based on a high efficiency condensing boiler over a 12 hour period.

Please Note:
To save energy and increase comfort, TRVs should also be fitted on all radiators in rooms without room thermostats.

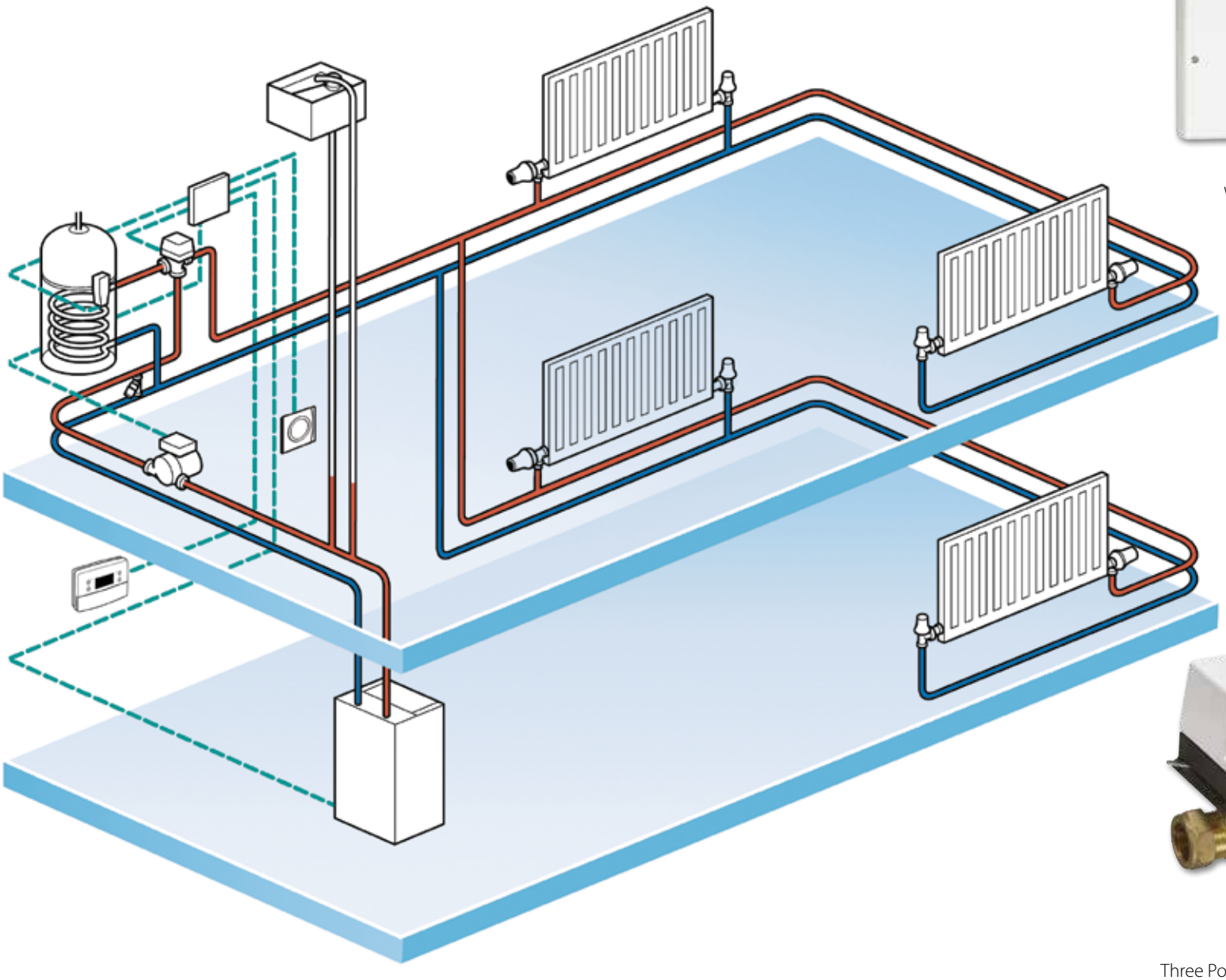
2 Zone Pack

Independent Timing for CH and DHW - Dial Thermostat and 3 Port Valve

1 x FP715Si
Two channel full programmer

1 x RET1000MS
Electronic Room Thermostat

1 x ATC
Cylinder Thermostat

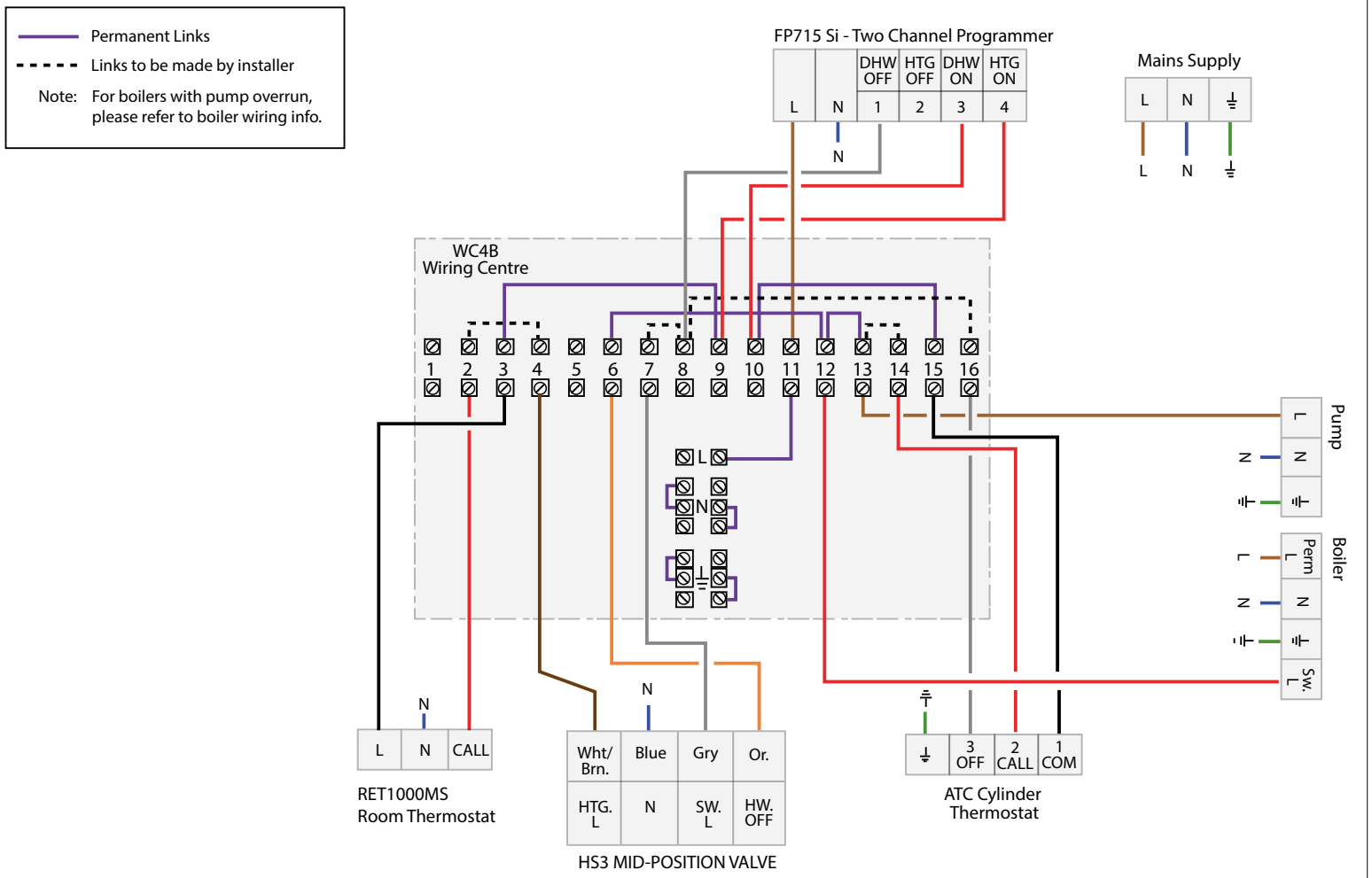


1 x WC4B
Wiring Centre

1 x HS3
Three Port Mid-position Valve

(Dwellings up to 150m²)

Code Number **087N8500KF**



Providing separate times for both heating and hot water, this pack fulfils the minimum control requirements for dwellings under 150m² with a vented hot water cylinder.

The **FP715Si** two channel timer is used to provide time control for the heating and hot water zones.

A dial setting **RET1000MS** thermostat provides the customer with a high level of space heating comfort and control accuracy.

Hot water control is achieved using an **ATC** cylinder thermostat which is easy to install and set, whilst a **3-Port Motorised Valve**, helps reduce the complexity of the installation.

This pack is ideal for installations using a standard hot water cylinder.

Potential savings with chrono-proportional control:

Control	Energy Saving (%)	Carbon Saving (%)
Mechanical On/Off	-	-
Electronic On/Off	**2.10**	**2.31**
Chrono-Proportional	**10.35**	**10.71**

Results based on a high efficiency condensing boiler over a 12 hour period.

Please Note:
To save energy and increase comfort, TRVs should also be fitted on all radiators in rooms without room thermostats.

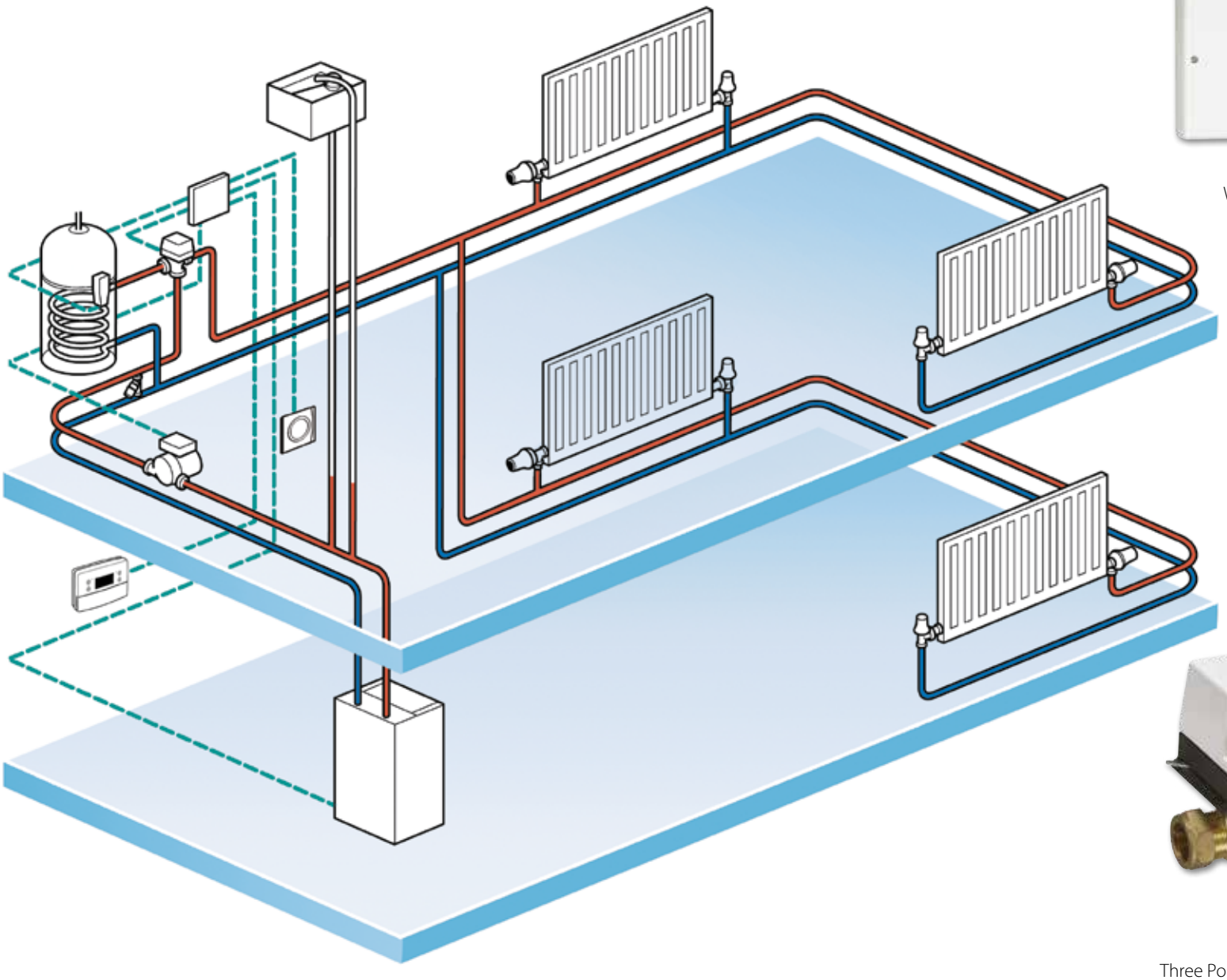
2 Zone Pack

Independent Timing for CH and DHW - Digital Thermostat and 3 Port Valve

1 x FP715Si
Two channel full programmer

1 x RET2000MS
Electronic
Room Thermostat

1 x ATC
Cylinder Thermostat

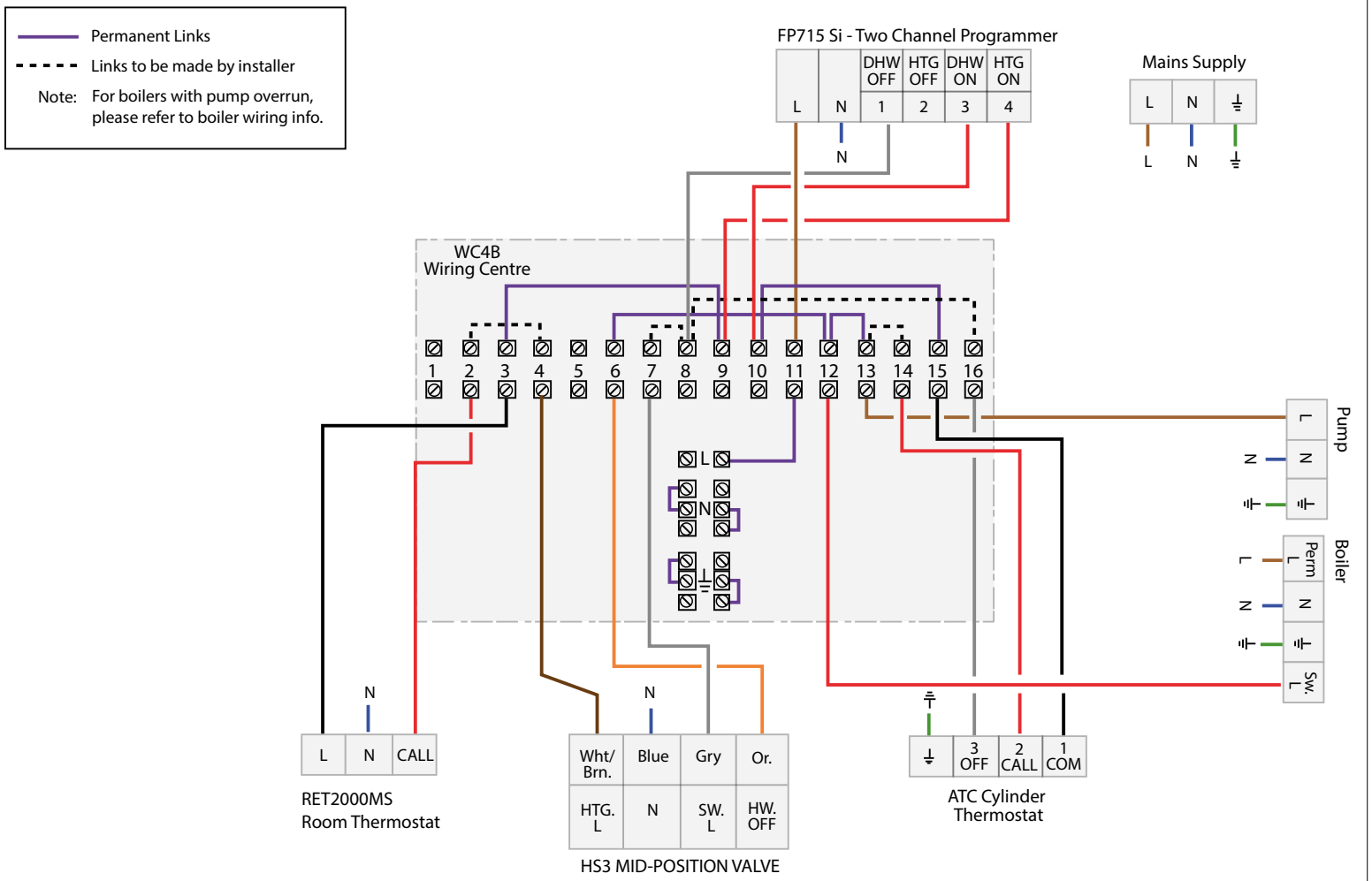


1 x WC4B
Wiring Centre

1 x HS3
Three Port Mid-position Valve

(Dwellings up to 150m²)

Code Number **087N8500KG**



Providing separate times for both heating and hot water, this pack fulfils the minimum control requirements for dwellings under 150m² with a vented hot water cylinder.

The **FP715Si** two channel timer is used to provide time control for the heating and hot water zones.

A digital **RET2000MS** thermostat provides the customer with a high level of space heating comfort and control accuracy.

Hot water control is achieved using an **ATC** cylinder thermostat which is easy to install and set, whilst a **3-Port Motorised Valve**, helps reduce the complexity of the installation.

This pack is ideal for installations using a standard hot water cylinder.

Potential savings with chrono-proportional control:

Control	Energy Saving (%)	Carbon Saving (%)
Mechanical On/Off	-	-
Electronic On/Off	**2.10**	**2.31**
Chrono-Proportional	**10.35**	**10.71**

Results based on a high efficiency condensing boiler over a 12 hour period.

Please Note:
To save energy and increase comfort, TRVs should also be fitted on all radiators in rooms without room thermostats.

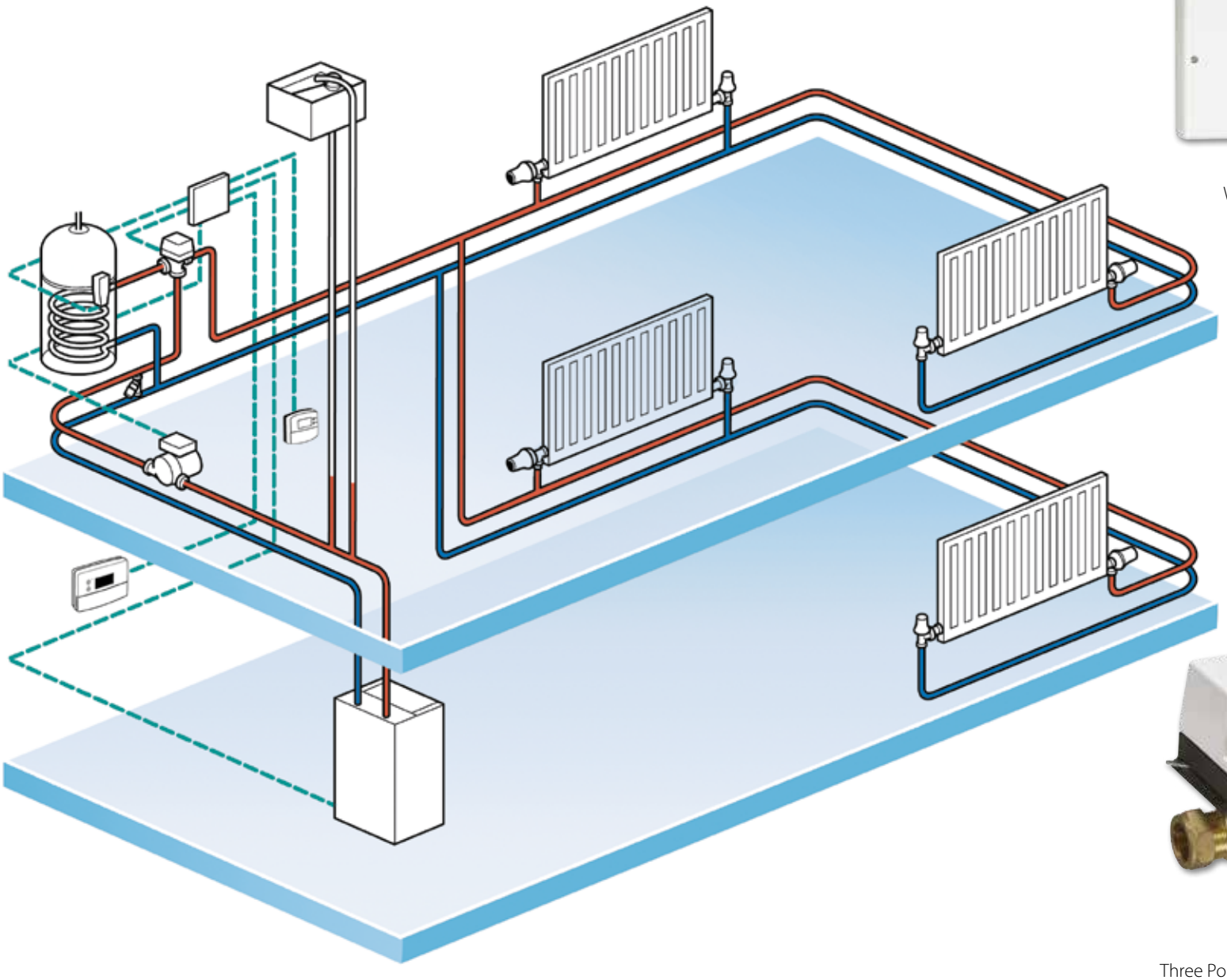
2 Zone Pack

Independent Timing for CH and DHW - Timeswitch and Programmable Thermostat

1 x TS715Si
Single Channel Timeswitch

1 x TP5000Si
Electronic Programmable
Room Thermostat

1 x ATC
Cylinder Thermostat

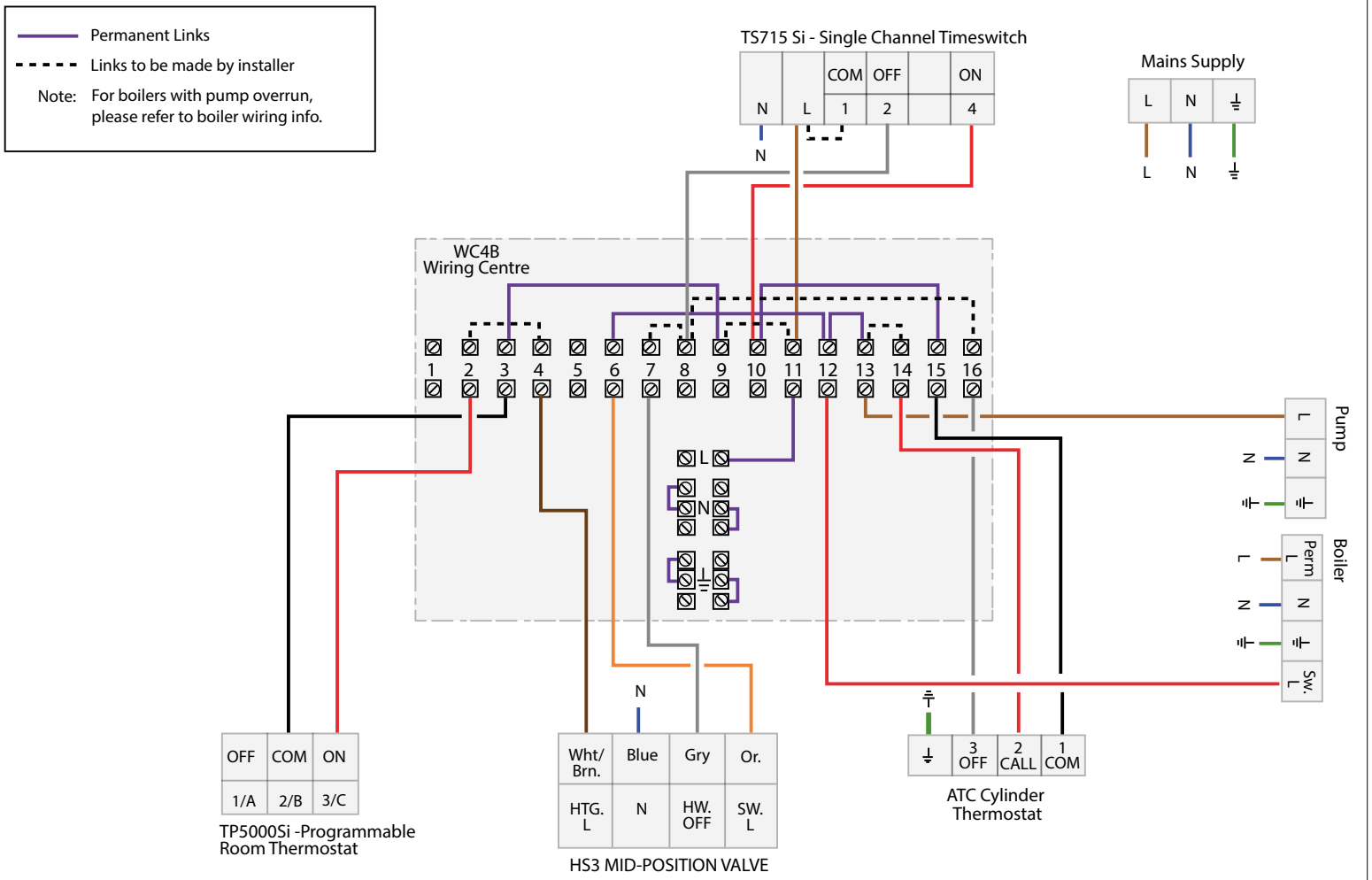


1 x WC4B
Wiring Centre

1 x HS3
Three Port Mid-position Valve

(Dwellings up to 150m²)

Code Number **087N8517KJ**



Providing separate times for both heating and hot water, this pack fulfils the minimum control requirements for dwellings under 150m² with a vented hot water cylinder.

Using a **TS715Si** single channel timeswitch to control the hot water times and a **TP5000Si** programmable room thermostat to provide independent heating zone timings, this pack provides the ultimate in control and potential energy savings to the end user.

A **3-Port Motorised Valve**, helps reduce the complexity of the installation.

The advanced chrono-proportional control offered by the **TP5000Si** can provide up to 10% CO^2 and energy savings when compared to a standard mechanical thermostat.

This pack is ideal for installations using a standard hot water cylinder.

Potential savings with chrono-proportional control:

Control	Energy Saving (%)	Carbon Saving (%)
Mechanical On/Off	-	-
Electronic On/Off	**2.10**	**2.31**
Chrono-Proportional	**10.35**	**10.71**

Results based on a high efficiency condensing boiler over a 12 hour period.

Please Note:
To save energy and increase comfort, TRVs should also be fitted on all radiators in rooms without room thermostats.

3 Zone Pack

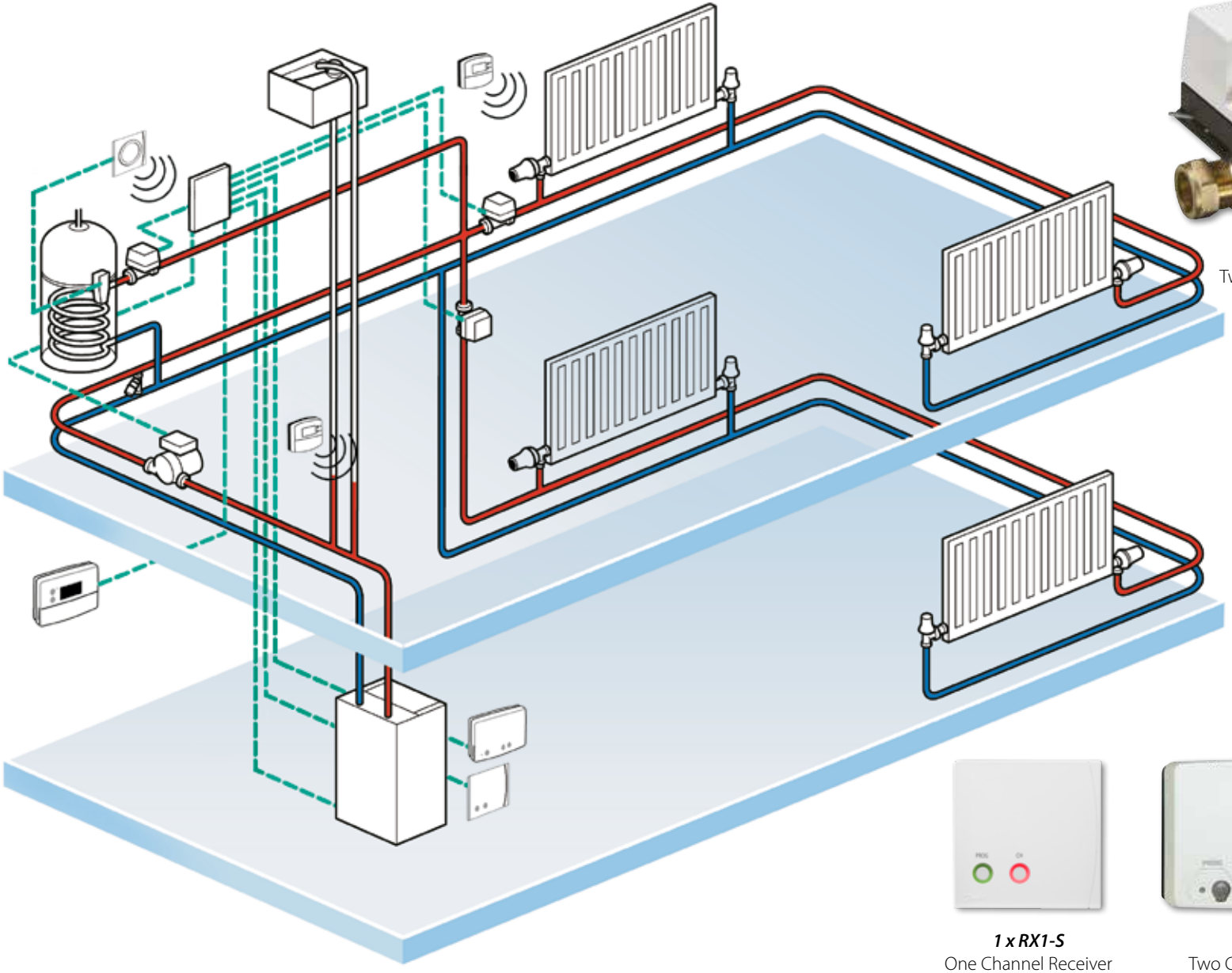
Independent Heating Times - Wireless System

1 x TS715Si
Single Channel Timeswitch

2 x TP5000RF Si
Electronic Programmable
Room Thermostat

1 x CET2000B-RF
Wireless Cylinder Thermostat

WC4B
Wiring Centre



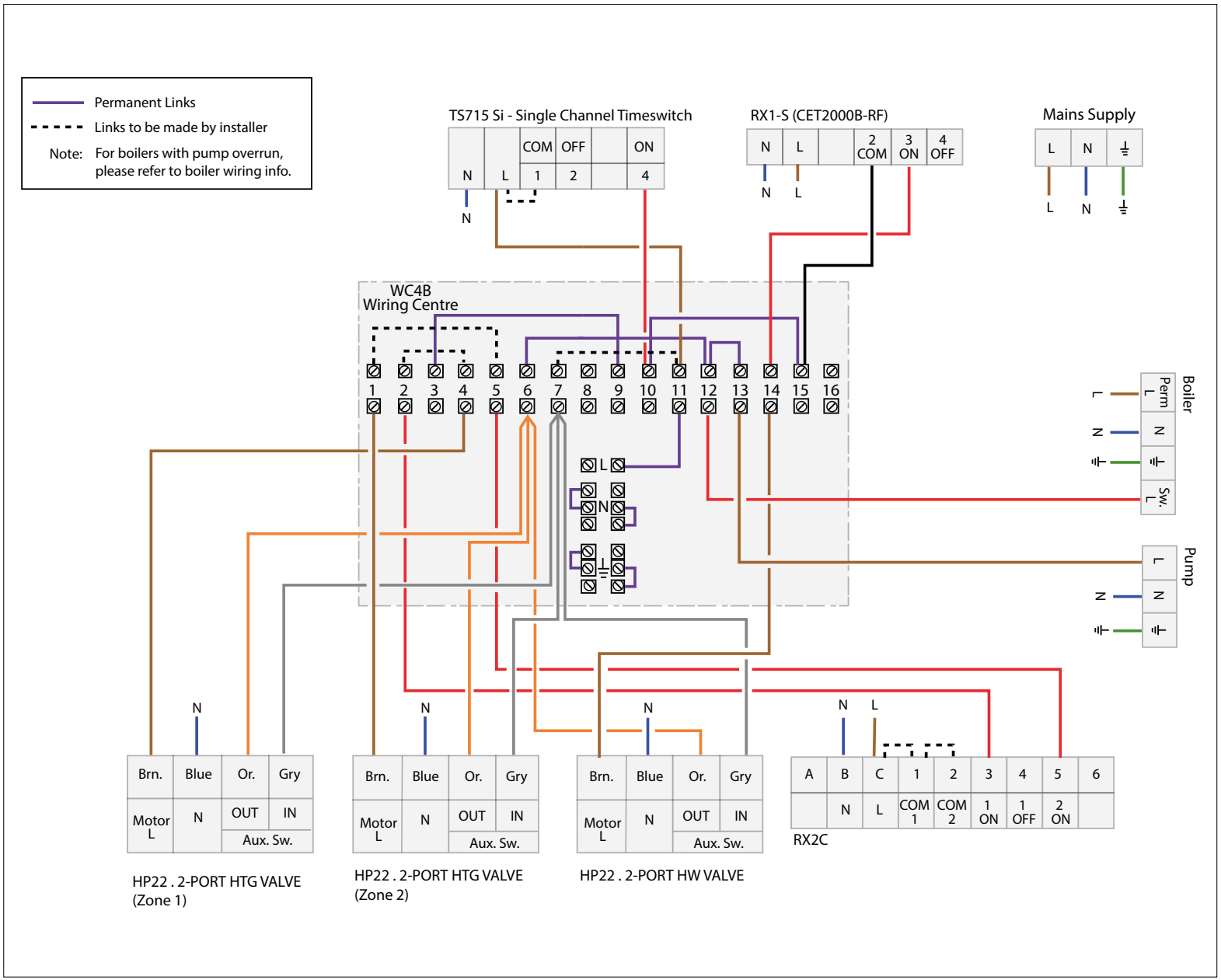
3 x HP22
Two port valve

1 x RX1-S
One Channel Receiver

1 x RX2C
Two Channel Receiver

(Dwellings above 150m²)

Code Number **087N6518CG**



A wireless solution for systems with a vented hot water cylinder providing an independent timebase for both heating zones and a separate timed channel for hot water control.

Ideal for situations where running wires is difficult or impossible, the wireless packs provide ease of installation as well as a simple setup with reliable operation.

This system uses a single channel timeswitch **TS715Si** for hot water timing, combined with a **CET2000B-RF** wireless cylinder thermostat and wireless **TP5000RF-Si** programmable room thermostats for separate time and temperature control of your heating zones.

All Danfoss wireless products use a secure digital radio communication system to ensure reliability and eliminate the possibility of interference with other wireless devices in the home.

This pack is ideal for installations using a vented hot water cylinder where fixed wiring is impractical and full independent timed control of all zones is required.

Potential savings with chrono-proportional control:

Control	Energy Saving (%)	Carbon Saving (%)
Mechanical On/Off	-	-
Electronic On/Off	**2.10**	**2.31**
Chrono-Proportional	**10.35**	**10.71**

Results based on a high efficiency condensing boiler over a 12 hour period.

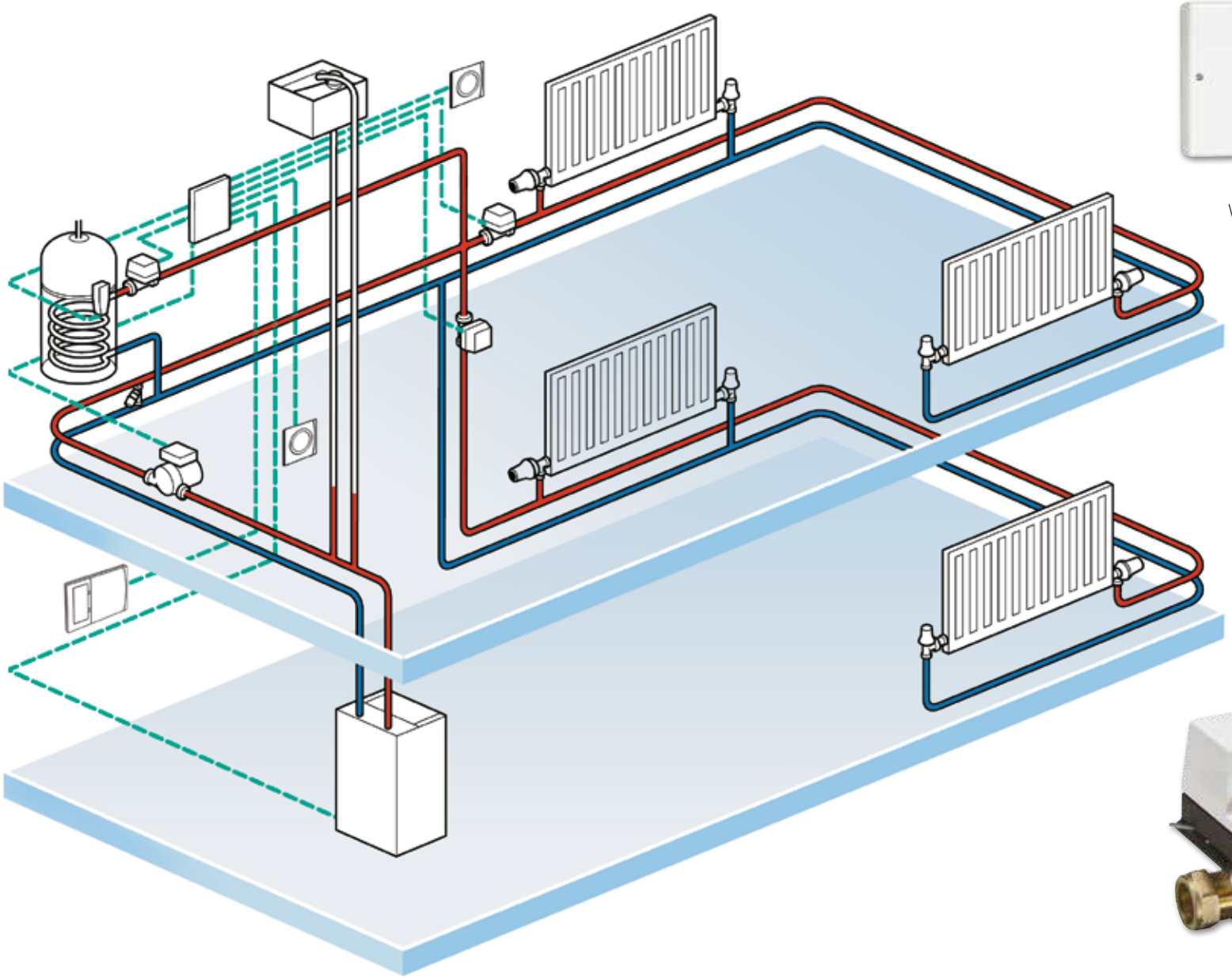
3 Zone Pack

Independent Heating Times - Dial Room Thermostats

1 x FP735Si
Three channel full programmer

2 x RET1000MS
Electronic
Room Thermostat

ATC
Cylinder Thermostat

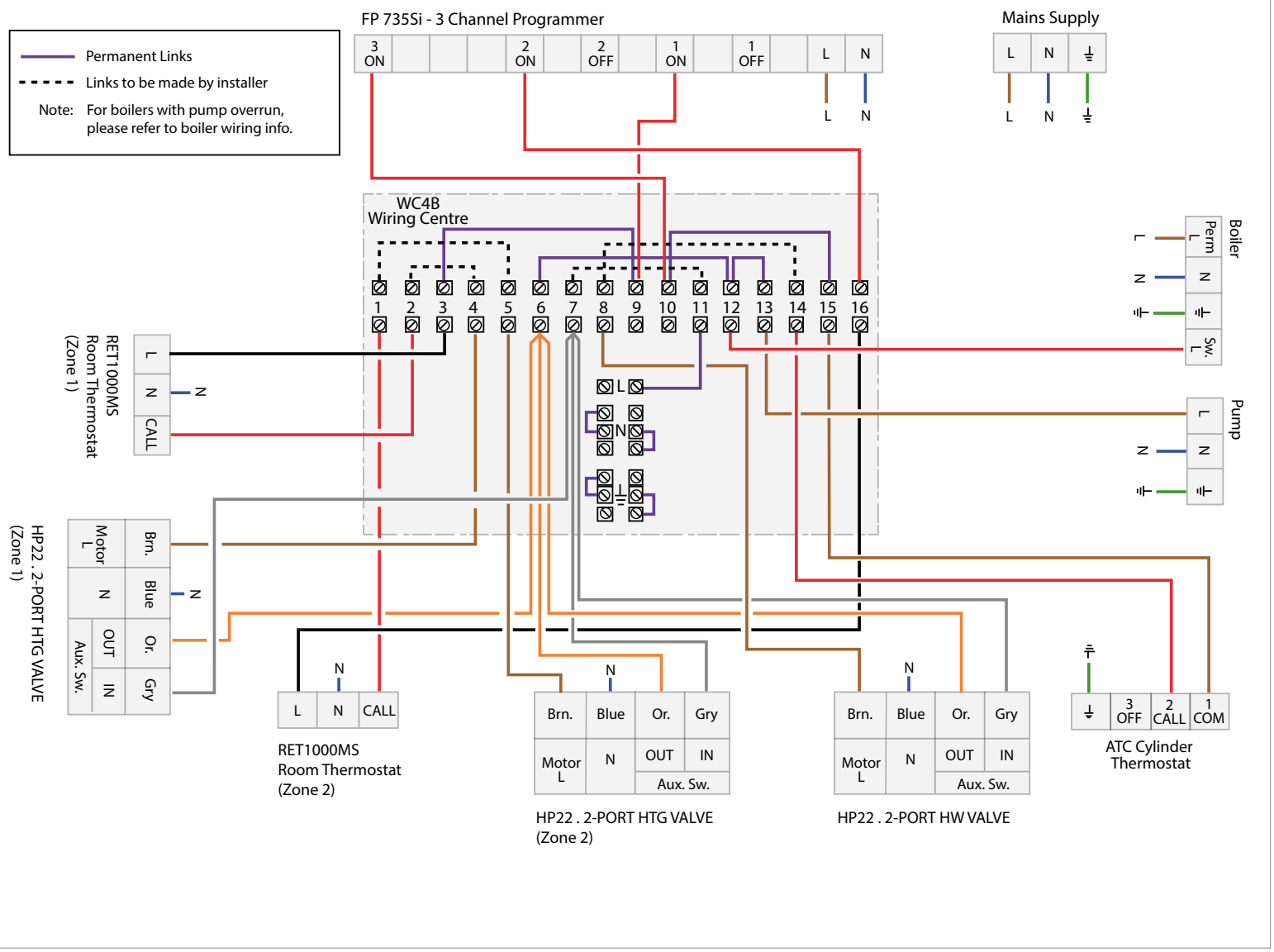


WC4B
Wiring Centre

3 x HP22
Two port valve

(Dwellings above 150m²)

Code Number **087N9501JV**



Providing separate times for two heating and a hot water zone, this pack fulfils the minimum control requirements for dwellings above 150m² using a standard hot water cylinder.

The **FP735Si** three channel programmer is used to provide time control for the heating and hot water zones.

A dial setting **RET1000MS** thermostat in each of the heating zones, provides the customer with a high level of space heating comfort and control accuracy with the added benefit of Chrono-proportional control.

Hot water control is achieved using an **ATC** cylinder thermostat which is easy to install and set.

This pack is ideal for installations using a standard hot water cylinder.

Potential savings with chrono-proportional control:

Control	Energy Saving (%)	Carbon Saving (%)
Mechanical On/Off	-	-
Electronic On/Off	**2.10**	**2.31**
Chrono-Proportional	**10.35**	**10.71**

Results based on a high efficiency condensing boiler over a 12 hour period.

Please Note:
To save energy and increase comfort, TRVs should also be fitted on all radiators in rooms without room thermostats.

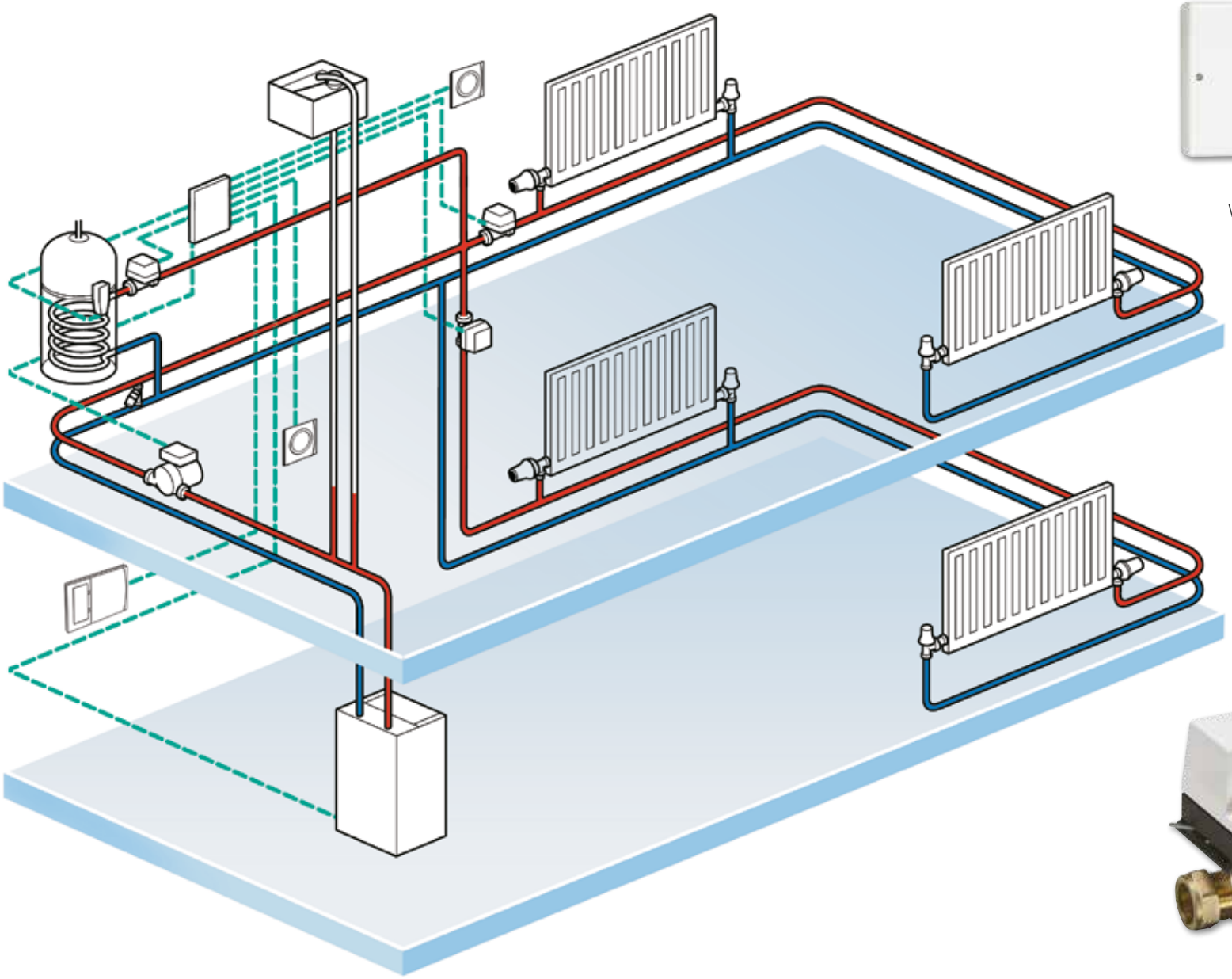
3 Zone Pack

Independent Heating Times - Digital Room Thermostat

1 x FP735Si
Three channel full programmer

2 x RET2000MS
Electronic
Room Thermostat

ATC
Cylinder Thermostat

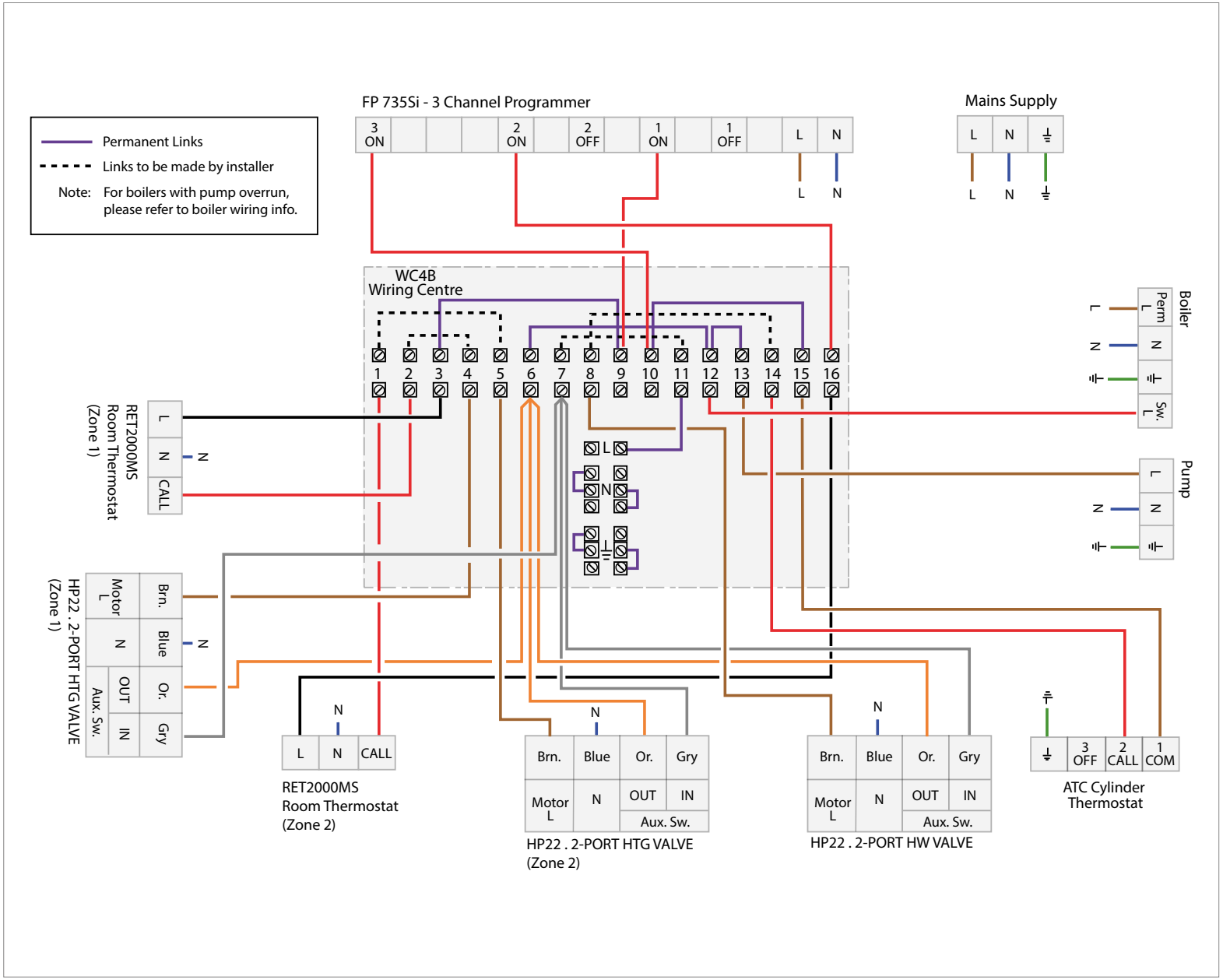


WC4B
Wiring Centre

3 x HP22
Two port valve

(Dwellings above 150m²)

Code Number **087N9501JW**



Providing separate times for two heating and a hot water zone, this pack fulfils the minimum control requirements for dwellings above 150m² using a standard hot water cylinder.

The **FP735Si** three channel programmer is used to provide time control for the heating and hot water zones.

A digital **RET2000MS** thermostat in each of the heating zones, provides the customer with a high level of space heating comfort and control accuracy with the added benefit of Chrono-proportional control.

Hot water control is achieved using an **ATC** cylinder thermostat which is easy to install and set.

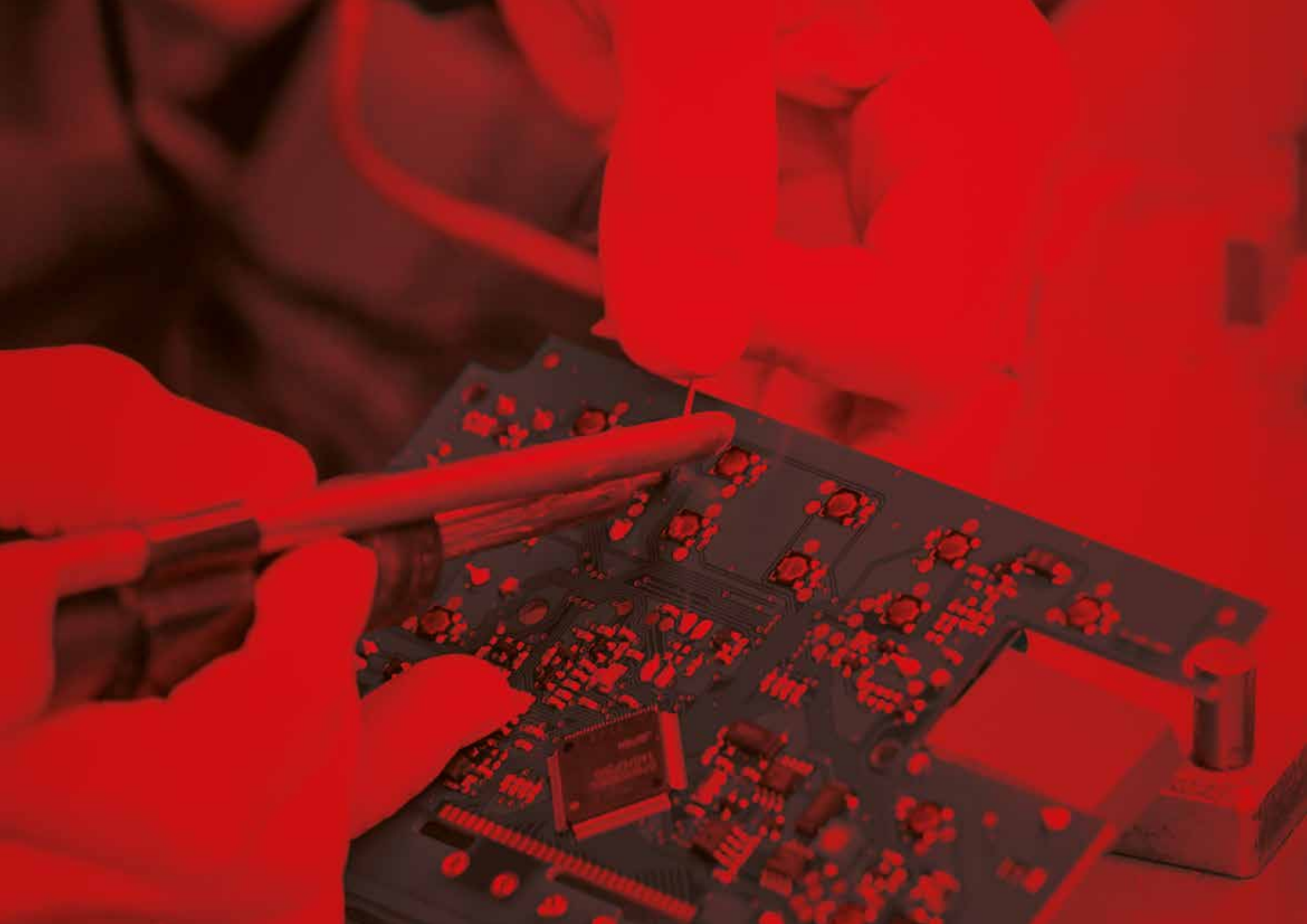
This pack is ideal for installations using a standard hot water cylinder.

Potential savings with chrono-proportional control:

Control	Energy Saving (%)	Carbon Saving (%)
Mechanical On/Off	-	-
Electronic On/Off	**2.10**	**2.31**
Chrono-Proportional	**10.35**	**10.71**

Results based on a high efficiency condensing boiler over a 12 hour period.

Please Note:
To save energy and increase comfort, TRVs should also be fitted on all radiators in rooms without room thermostats.



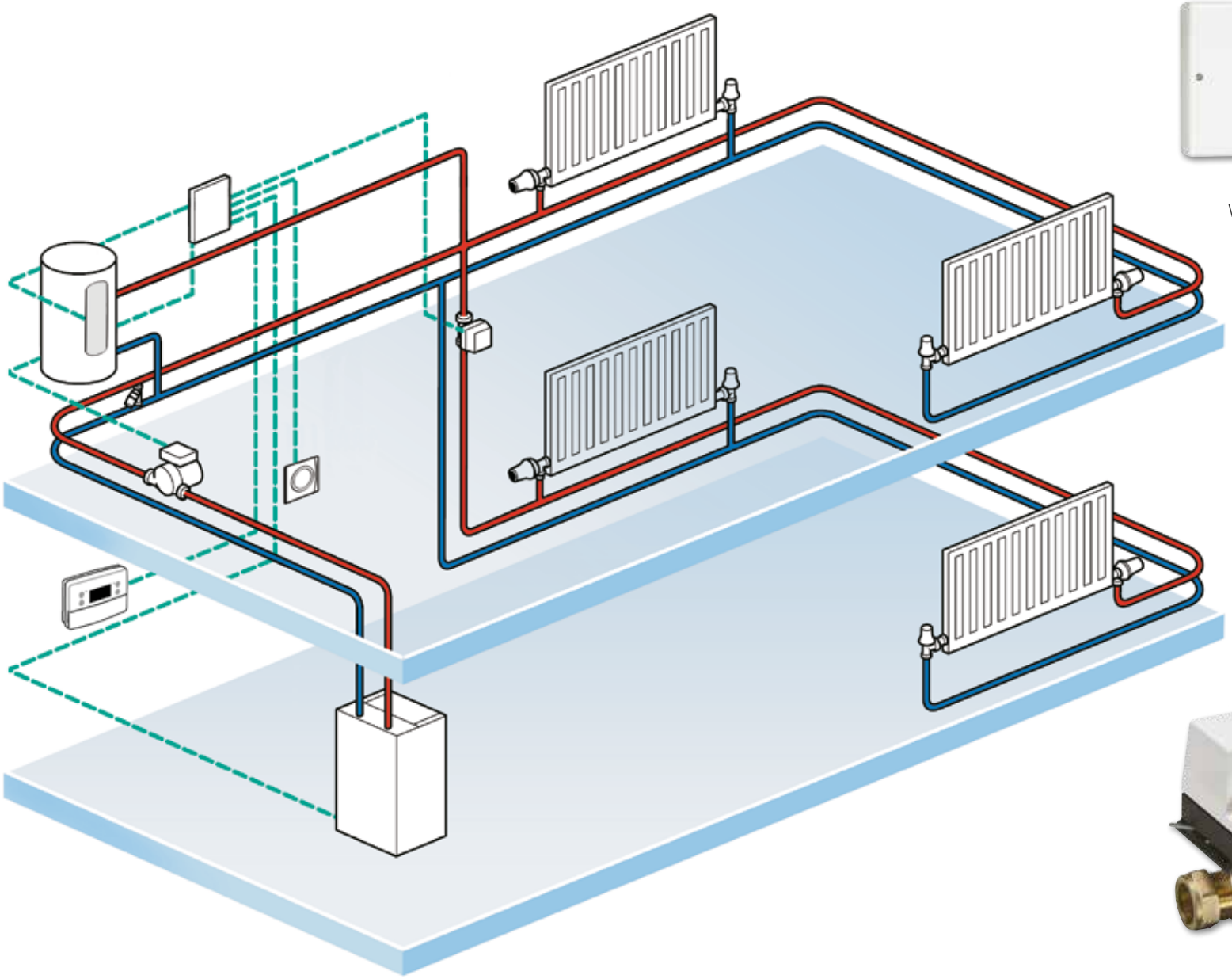
2013 Building Regulation - Part L Control Packs for **Unvented Systems**

2 Zone Pack

Independent Timing for CH and DHW - Unvented System - Dial Room Thermostat

1 x FP715Si
Two channel full programmer

1 x RET1000MS
Electronic Room Thermostat

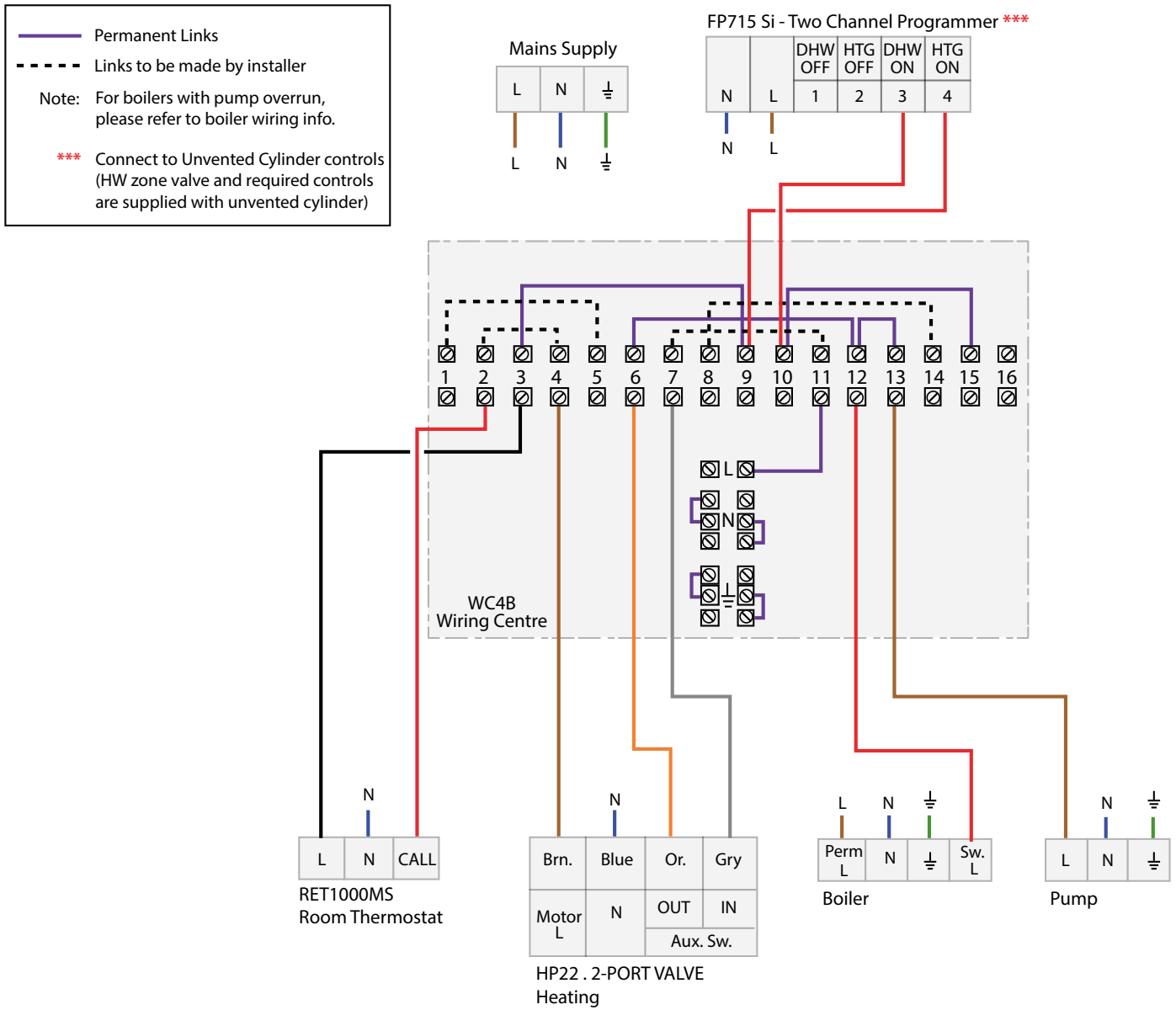


WC4B
Wiring Centre

1 x HP22
Two port valve

(Dwellings up to 150m²)

Code Number **087N8500KK**



Providing separate times for heating and hot water, this pack fulfils the minimum control requirements for dwellings under 150m² using an unvented hot water cylinder.

The **FP715Si** two channel timer is used to provide time control for the heating and hot water zones.

A dial setting **RET1000MS** thermostat provides the customer with a high level of space heating comfort and control accuracy with the added benefit of chrono-proportional control which can provide up to 10% CO^2 and cost savings when compared to a standard mechanical thermostat.

Hot water control is achieved using the controls prefitted to the unvented hot water cylinder. For wiring and installation detail please refer to the manufacturer's instructions.

This pack is ideal for installations using a standard unvented hot water cylinder.

Potential savings with chrono-proportional control:

Control	Energy Saving (%)	Carbon Saving (%)
Mechanical On/Off	-	-
Electronic On/Off	**2.10**	**2.31**
Chrono-Proportional	**10.35**	**10.71**

Results based on a high efficiency condensing boiler over a 12 hour period.

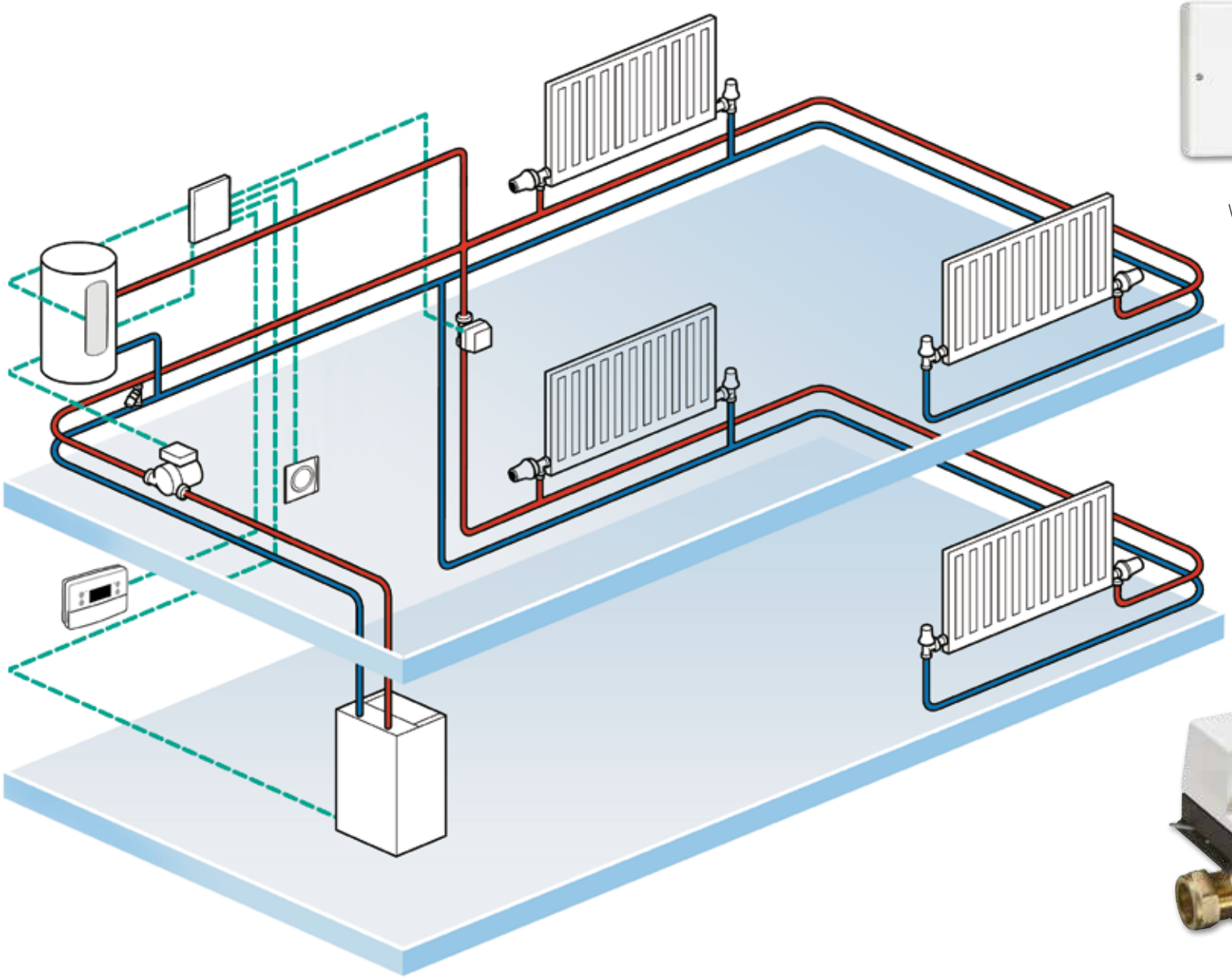
Please Note:
To save energy and increase comfort, TRVs should also be fitted on all radiators in rooms without room thermostats.

2 Zone Pack

Independent Timing for CH and DHW - Unvented System - Digital Room Thermostat

1 x FP715Si
Two channel full programmer

1 x RET2000MS
Electronic
Room Thermostat

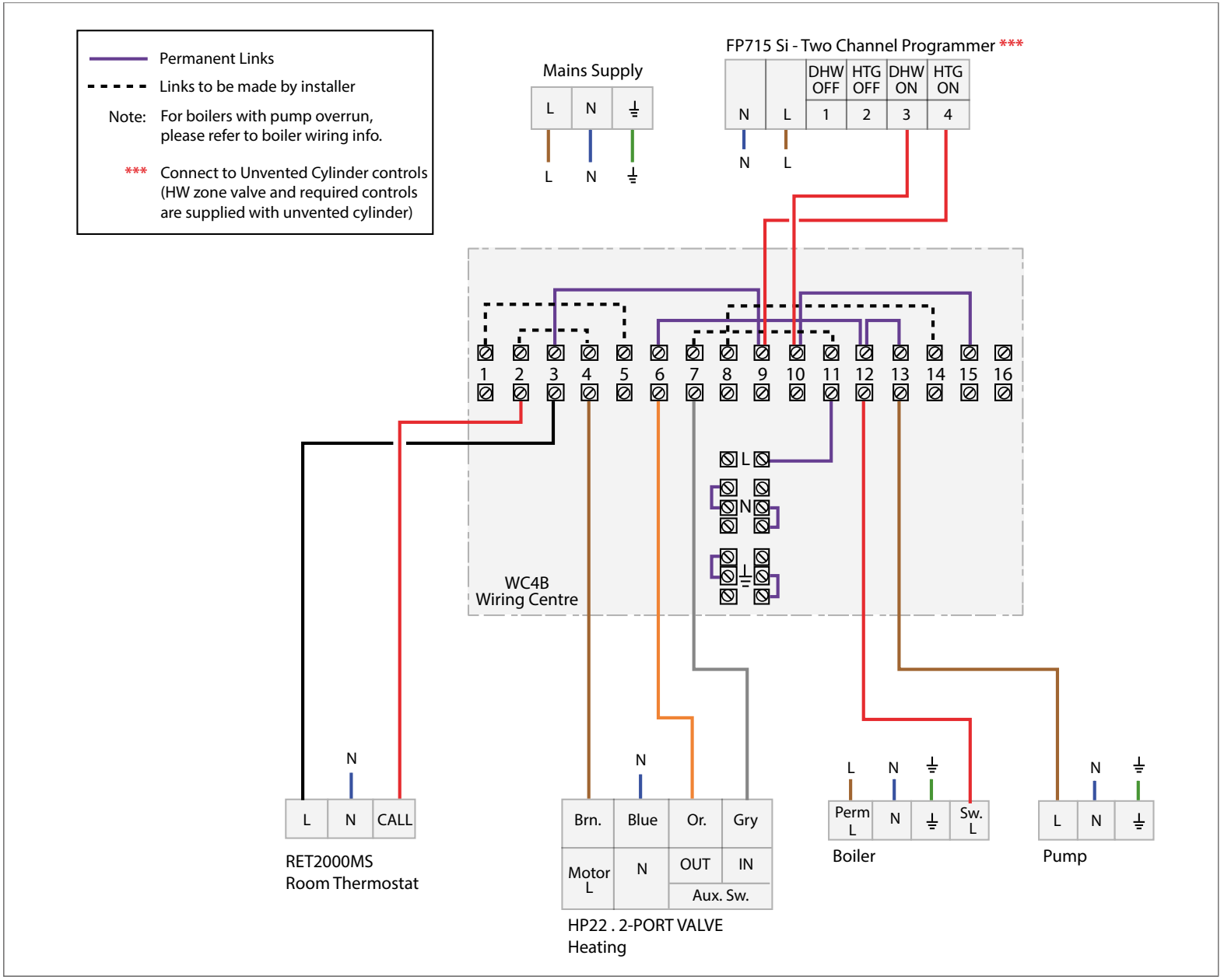


WC4B
Wiring Centre

1 x HP22
Two port valve

(Dwellings up to 150m²)

Code Number **087N8500KL**



Providing separate times for heating and hot water, this pack fulfils the minimum control requirements for dwellings under 150m² using an unvented hot water cylinder.

The **FP715Si** two channel timer is used to provide time control for the heating and hot water zones.

A digital **RET2000MS** thermostat provides the customer with a high level of space heating comfort and control accuracy with the added benefit of chrono-proportional control which can provide up to 10% CO^2 and cost savings when compared to a standard mechanical thermostat.

Hot water control is achieved using the controls prefitted to the unvented hot water cylinder. For wiring and installation detail please refer to the manufacturer's instructions.

This pack is ideal for installations using a standard unvented hot water cylinder.

Potential savings with chrono-proportional control:

Control	Energy Saving (%)	Carbon Saving (%)
Mechanical On/Off	-	-
Electronic On/Off	**2.10**	**2.31**
Chrono-Proportional	**10.35**	**10.71**

Results based on a high efficiency condensing boiler over a 12 hour period.

Please Note:
To save energy and increase comfort, TRVs should also be fitted on all radiators in rooms without room thermostats.

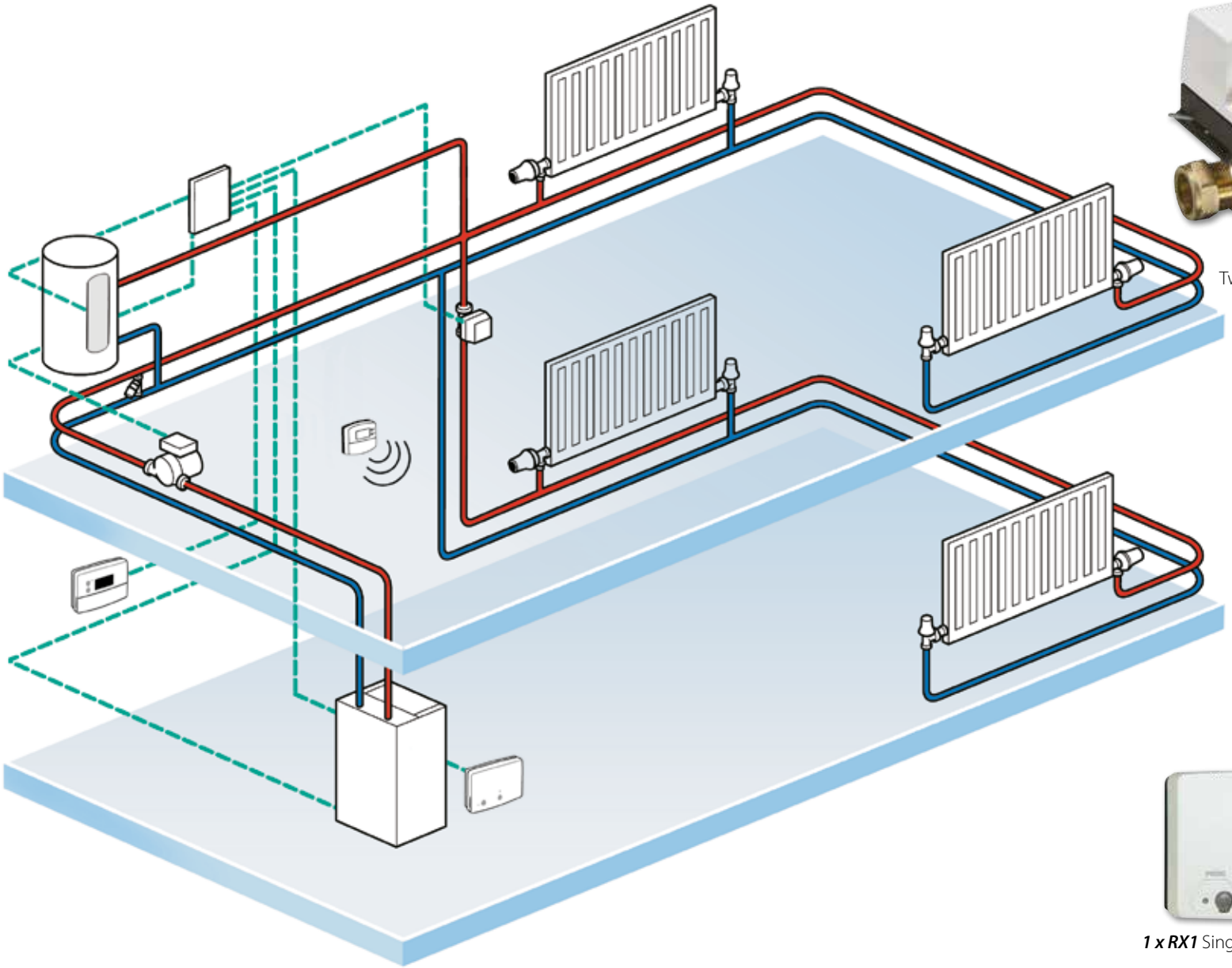
2 Zone Pack

Independent Timing for CH and DHW - Wireless Unvented System

1 x TS715Si
Single Channel Timeswitch

1 x TP5000RF-Si
Electronic Programmable
Room Thermostat

WC4B
Wiring Centre

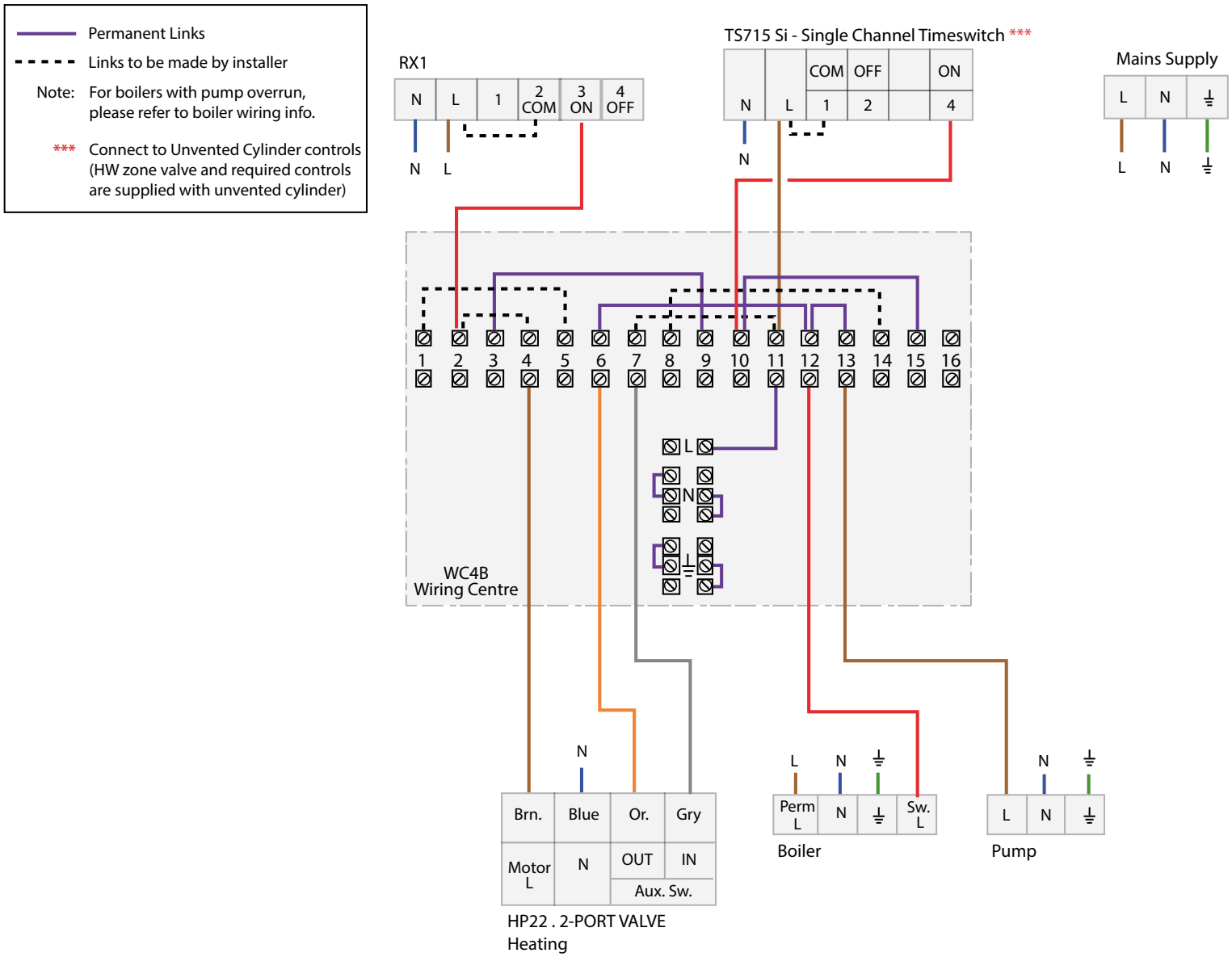


1 x HP22
Two port valve

1 x RX1 Single Channel Receiver

(Dwellings up to 150m²)

Code Number **087N6517CY**



A wireless solution for systems with an unvented hot water cylinder providing an independent timebase for heating and hot water control.

Ideal for situations where running wires is difficult or impossible, the wireless packs provide ease of installation as well as a simple setup with reliable operation.

Using a wireless **TP5000RF-Si** programmable room thermostat enables the user full time and temperature control of the heating zone. The hot water zone time is controlled by the **TS715Si** timeswitch and the other controls (provided by unvented cylinder manufacturer) can be easily integrated into the system.

All Danfoss wireless products use a secure digital radio communication system to ensure reliability and eliminate the possibility of interference with other wireless devices in the home.

This pack is ideal for installations using an unvented hot water cylinder where fixed wiring is impractical and undesirable.

Potential savings with chrono-proportional control:

Control	Energy Saving (%)	Carbon Saving (%)
Mechanical On/Off	-	-
Electronic On/Off	**2.10**	**2.31**
Chrono-Proportional	**10.35**	**10.71**

Results based on a high efficiency condensing boiler over a 12 hour period.

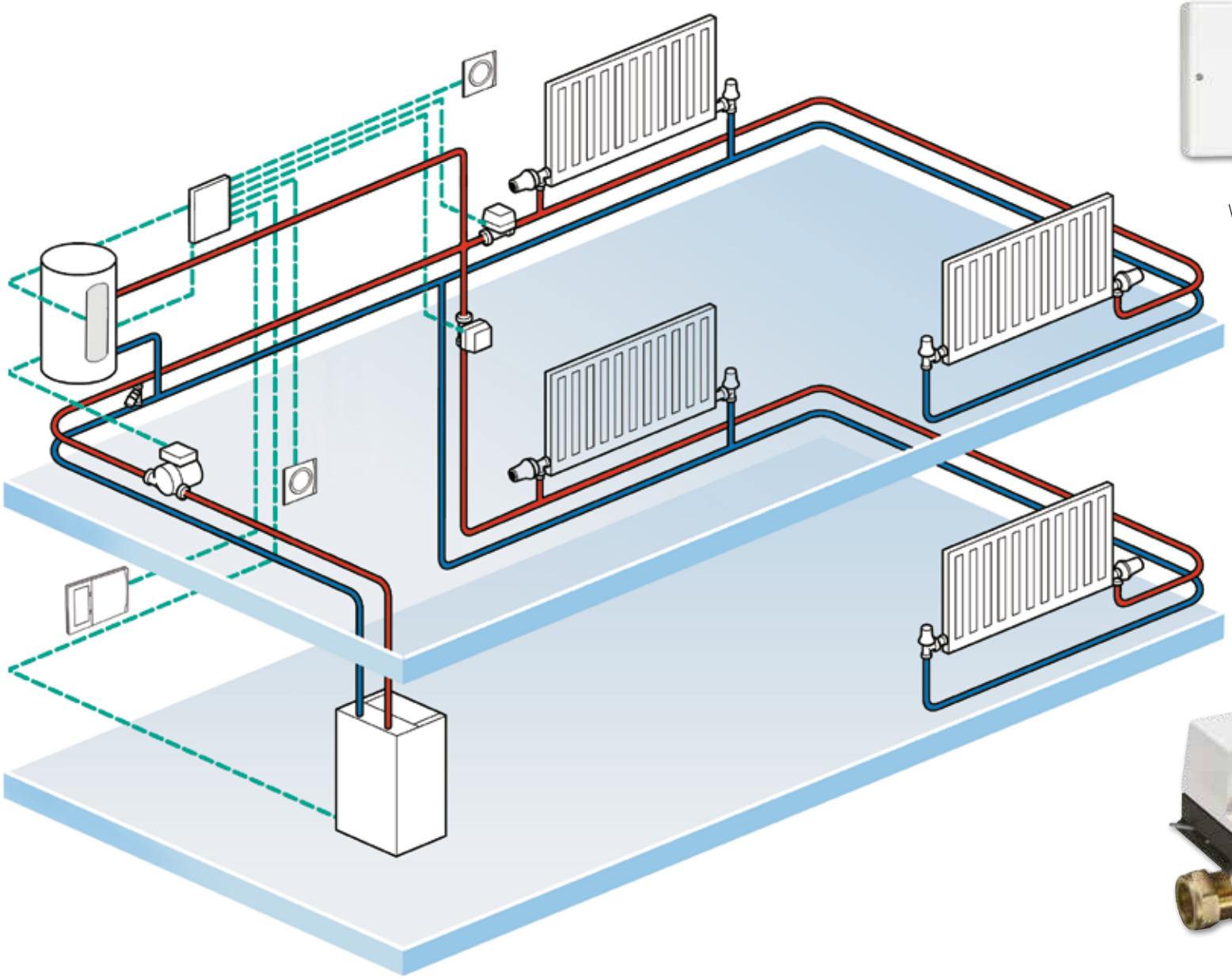
Please Note:
To save energy and increase comfort, TRVs should also be fitted on all radiators in rooms without room thermostats.

3 Zone Pack

Independent Heating Times - Unvented System - Dial Room Thermostats

1 x FP735Si
Three channel full programmer

2 x RET1000MS
Electronic
Room Thermostat

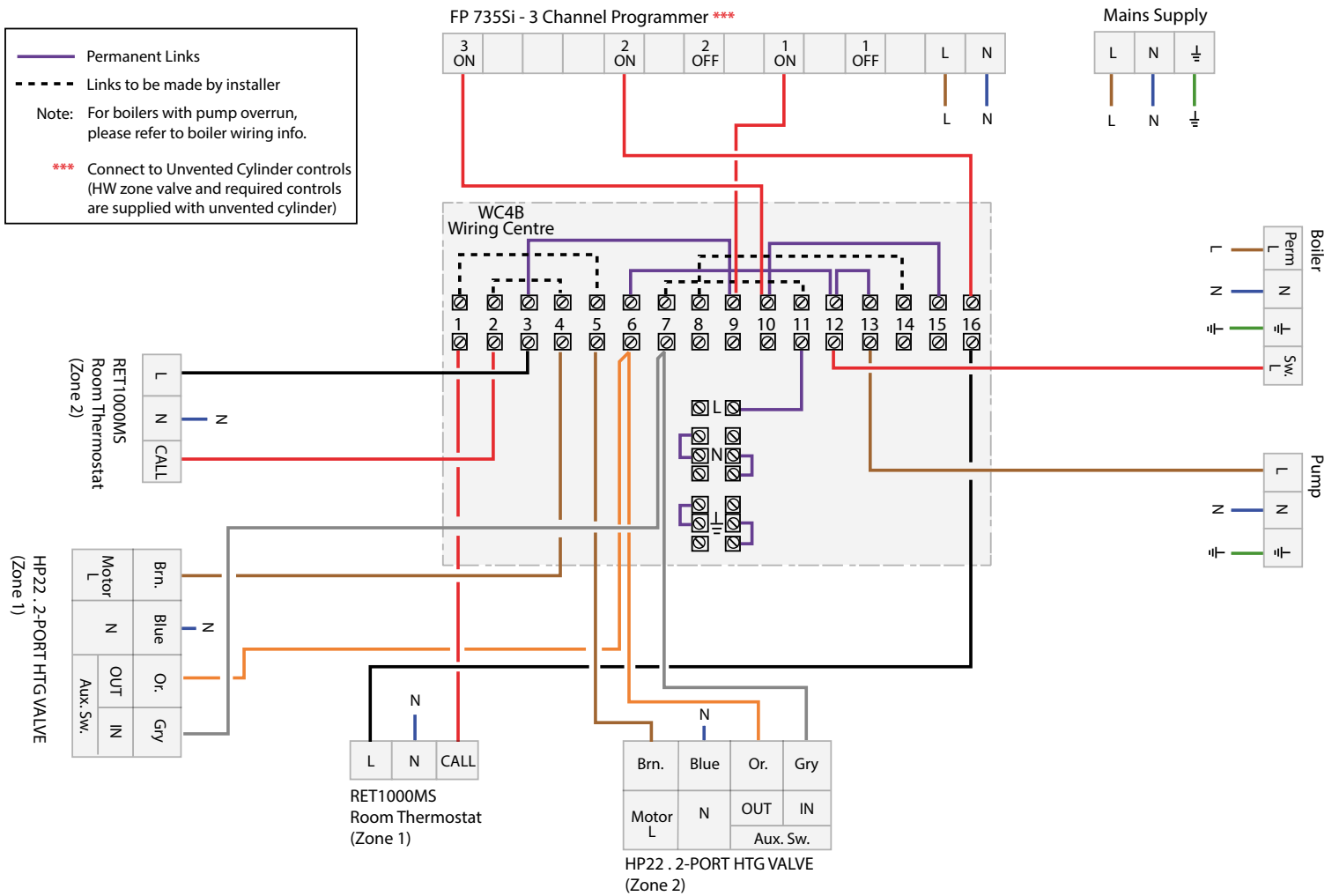


WC4B
Wiring Centre

2 x HP22
Two port valve

(Dwellings above 150m²)

Code Number **087N9501JY**



Providing independent times for both heating zones and a separate timed hot water zone, this pack fulfils the minimum control requirements for dwellings over 150m² using an unvented hot water cylinder.

The **FP735Si** three channel programmer is used to provide independent time control for both heating and hot water zones.

A dial setting **RET1000MS** thermostat provides the customer with a high level of space heating comfort and control accuracy in both heating zones with the added benefit of Chrono-proportional control.

Hot water control is achieved using the controls prefitted to the unvented hot water cylinder. For wiring and installation detail please refer to the manufacturer's instructions.

This pack is ideal for installations using a standard unvented hot water cylinder.

Potential savings with chrono-proportional control:

Control	Energy Saving (%)	Carbon Saving (%)
Mechanical On/Off	-	-
Electronic On/Off	**2.10**	**2.31**
Chrono-Proportional	**10.35**	**10.71**

Results based on a high efficiency condensing boiler over a 12 hour period.

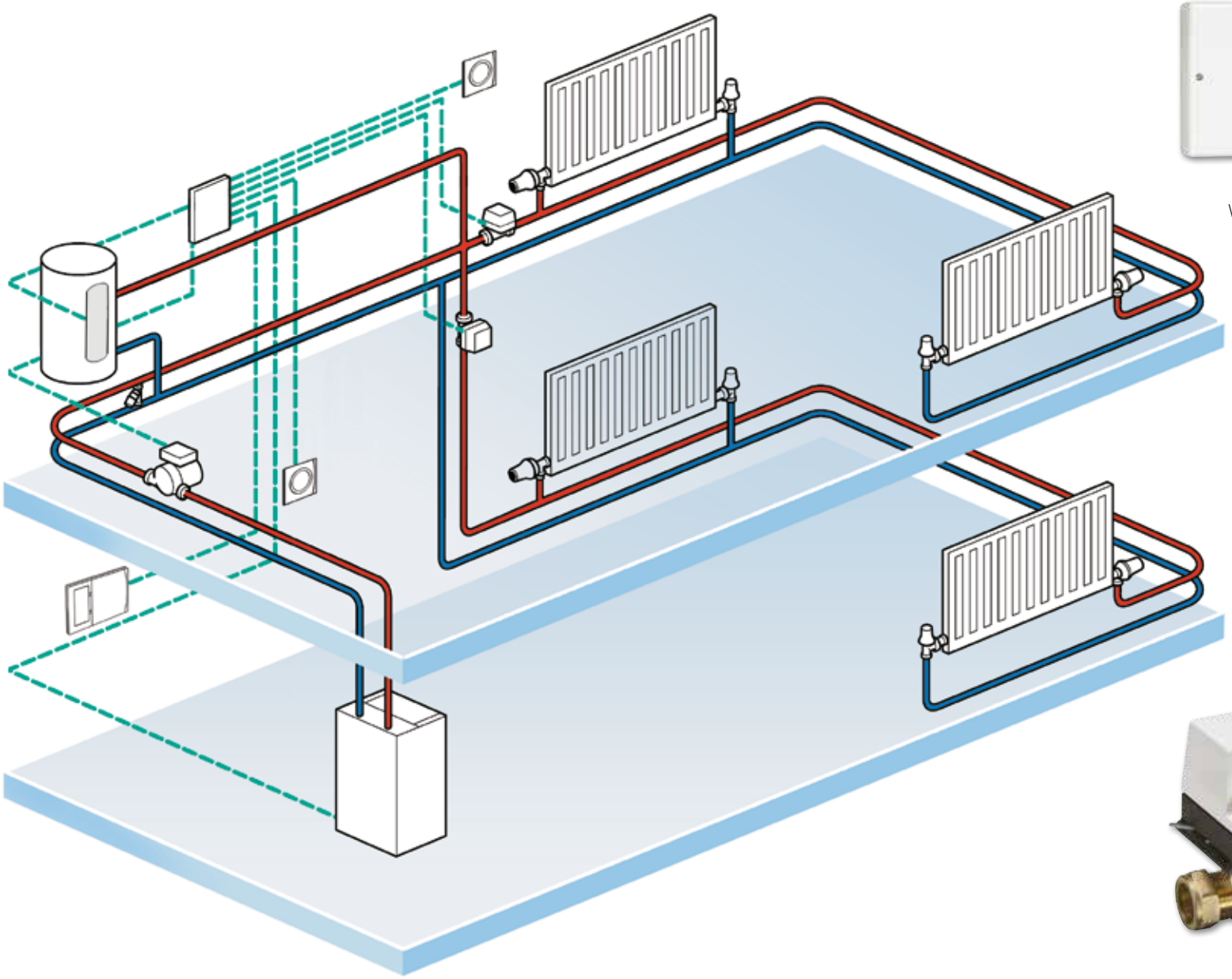
Please Note:
To save energy and increase comfort, TRVs should also be fitted on all radiators in rooms without room thermostats.

3 Zone Pack

Independent Heating Times - Unvented System - Digital Room Thermostats

1 x FP735Si
Three channel full programmer

2 x RET2000MS
Electronic
Room Thermostat

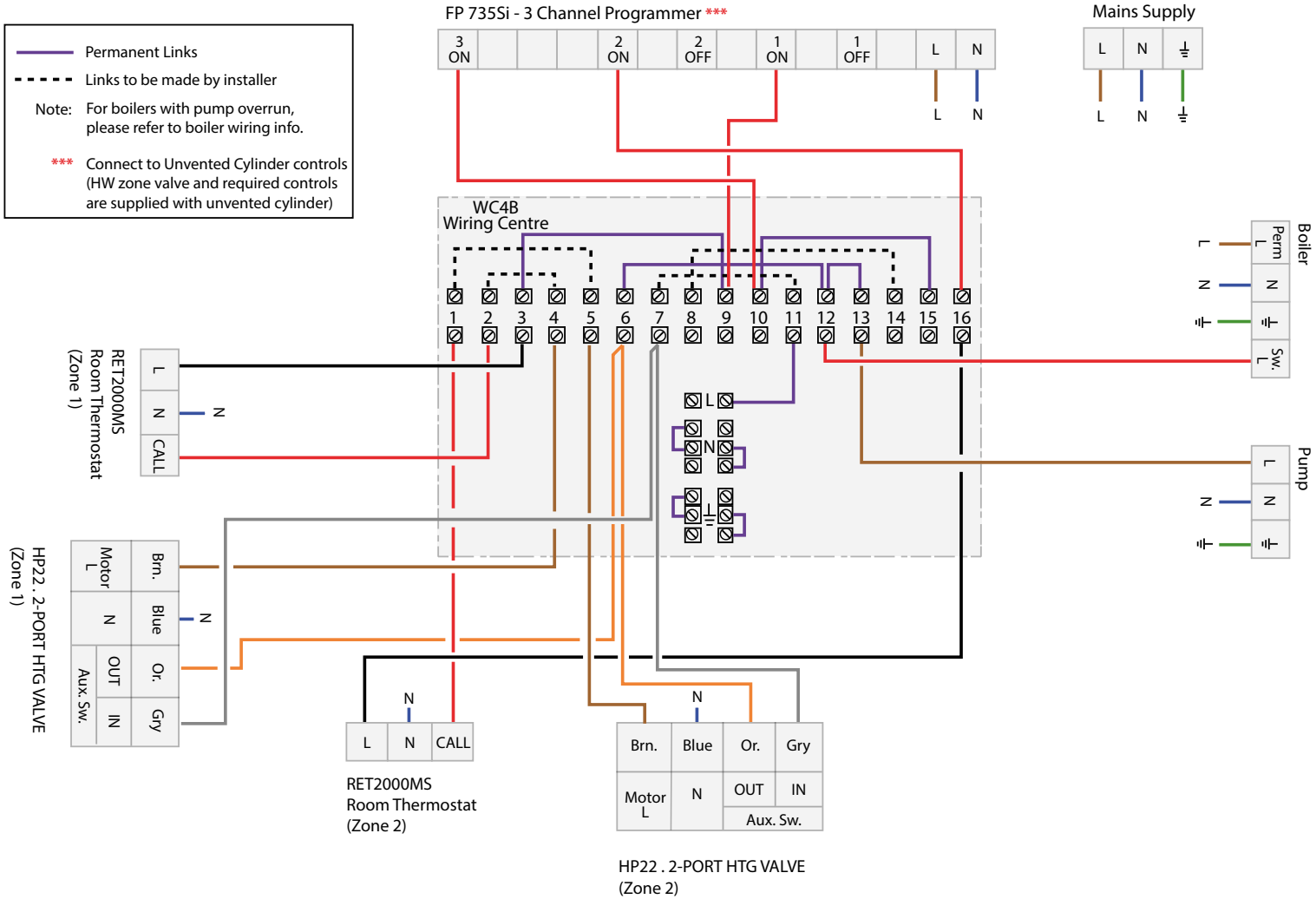


WC4B
Wiring Centre

2 x HP22
Two port valve

(Dwellings above 150m²)

Code Number **087N9501KA**



Providing independent times for both heating zones and a separate timed hot water zone, this pack fulfils the minimum control requirements for dwellings over 150m² using an unvented hot water cylinder.

The **FP735Si** three channel programmer is used to provide independent time control for both heating and hot water zones.

A digital **RET2000MS** thermostat provides the customer with a high level of space heating comfort and control accuracy in both heating zones with the added benefit of Chrono-proportional control.

Hot water control is achieved using the controls prefitted to the unvented hot water cylinder. For wiring and installation detail please refer to the manufacturer's instructions.

This pack is ideal for installations using a standard unvented hot water cylinder.

Potential savings with chrono-proportional control:

Control	Energy Saving (%)	Carbon Saving (%)
Mechanical On/Off	-	-
Electronic On/Off	**2.10**	**2.31**
Chrono-Proportional	**10.35**	**10.71**

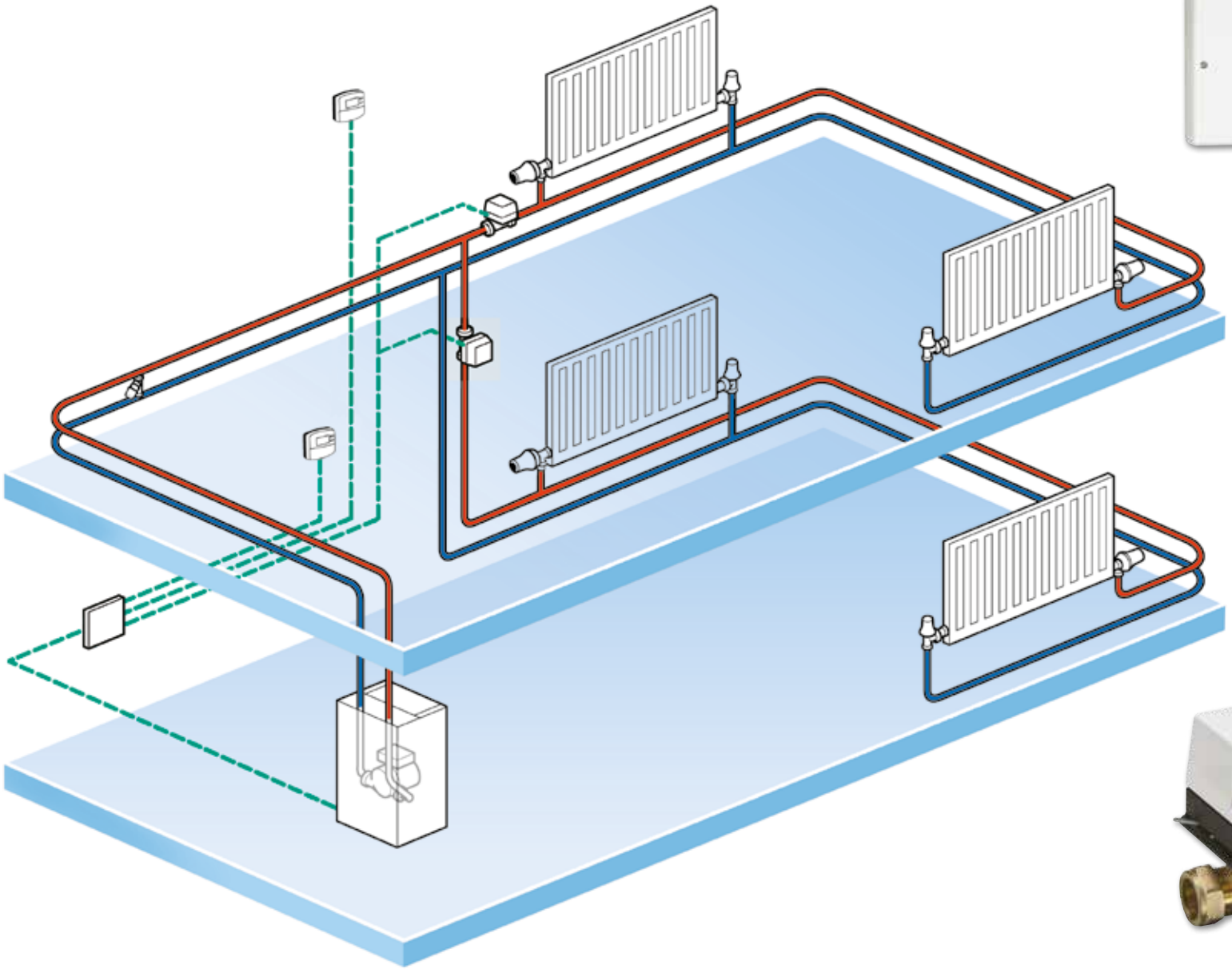
Results based on a high efficiency condensing boiler over a 12 hour period.

Please Note:
To save energy and increase comfort, TRVs should also be fitted on all radiators in rooms without room thermostats.

2013 Building Regulation - Part L Control Packs for **Combi Systems**

2 Zone Pack

Independent Heating Times - Combi System



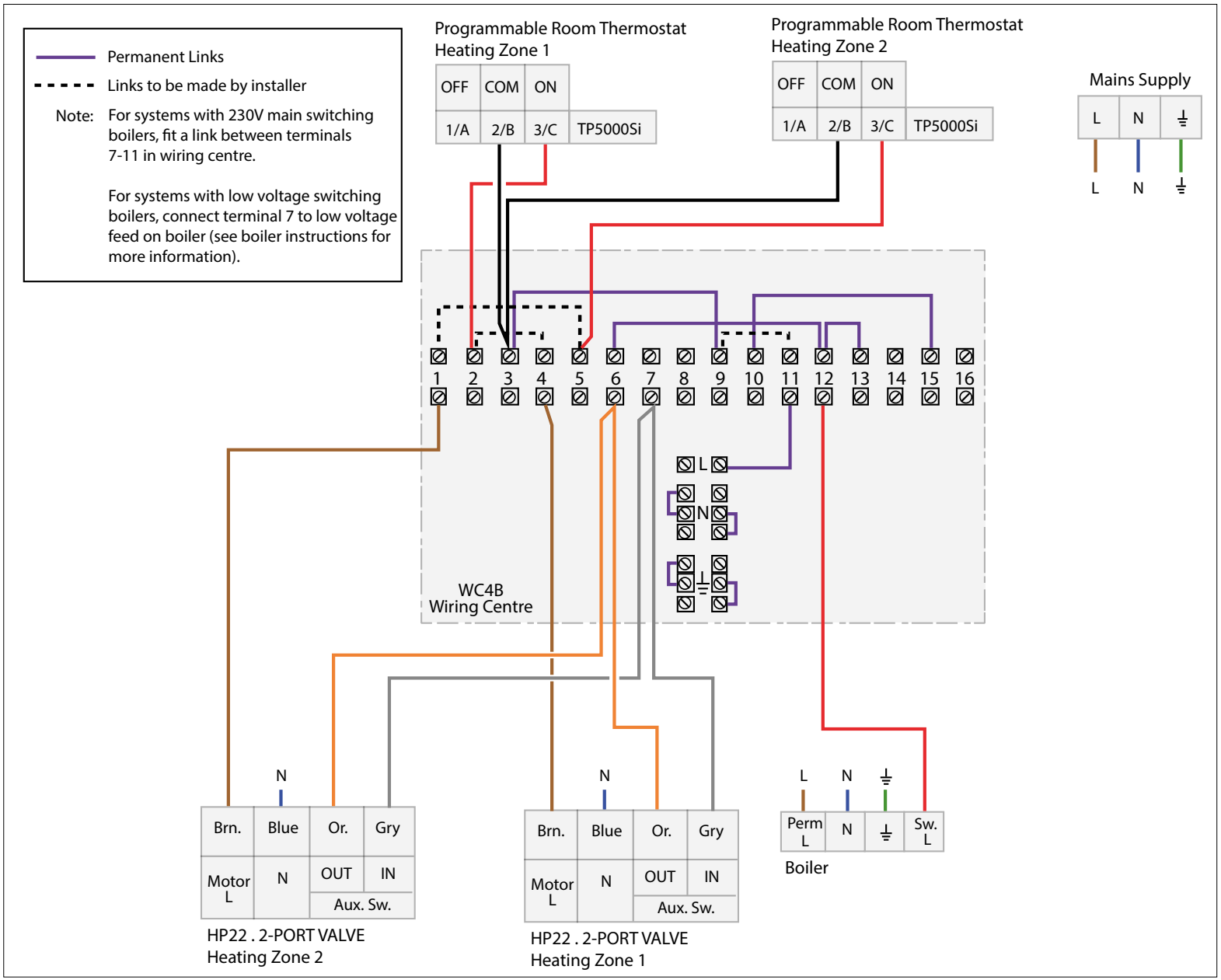
2 x TP5000Si
Electronic Programmable
Room Thermostat

WC4B
Wiring Centre

2 x HP22
Two port valve

(Dwellings above 150m²)

Code Number **087N6520H4**



For systems using combination boilers where full programmable control of the heating zones is required. This pack provides heating control over two zones with a separate timebase for each zone.

The fitting of the **TP5000Si** programmable thermostat to both the living and sleeping zones in the system allows full time and temperature independent control of each zone.

Having separate time/temperature profiling of each zone means the ultimate in comfort and energy savings for the occupier, this, combined with the advanced Chrono-proportional control offered by the **TP5000Si** can provide up to 10% CO^2 and cost savings when compared to a standard mechanical thermostat.

This pack is ideal for installations using a combination boiler where total flexibility and accurate control are demanded for each zone.

Potential savings with chrono-proportional control:

Control	Energy Saving (%)	Carbon Saving (%)
Mechanical On/Off	-	-
Electronic On/Off	**2.10**	**2.31**
Chrono-Proportional	**10.35**	**10.71**

Results based on a high efficiency condensing boiler over a 12 hour period.

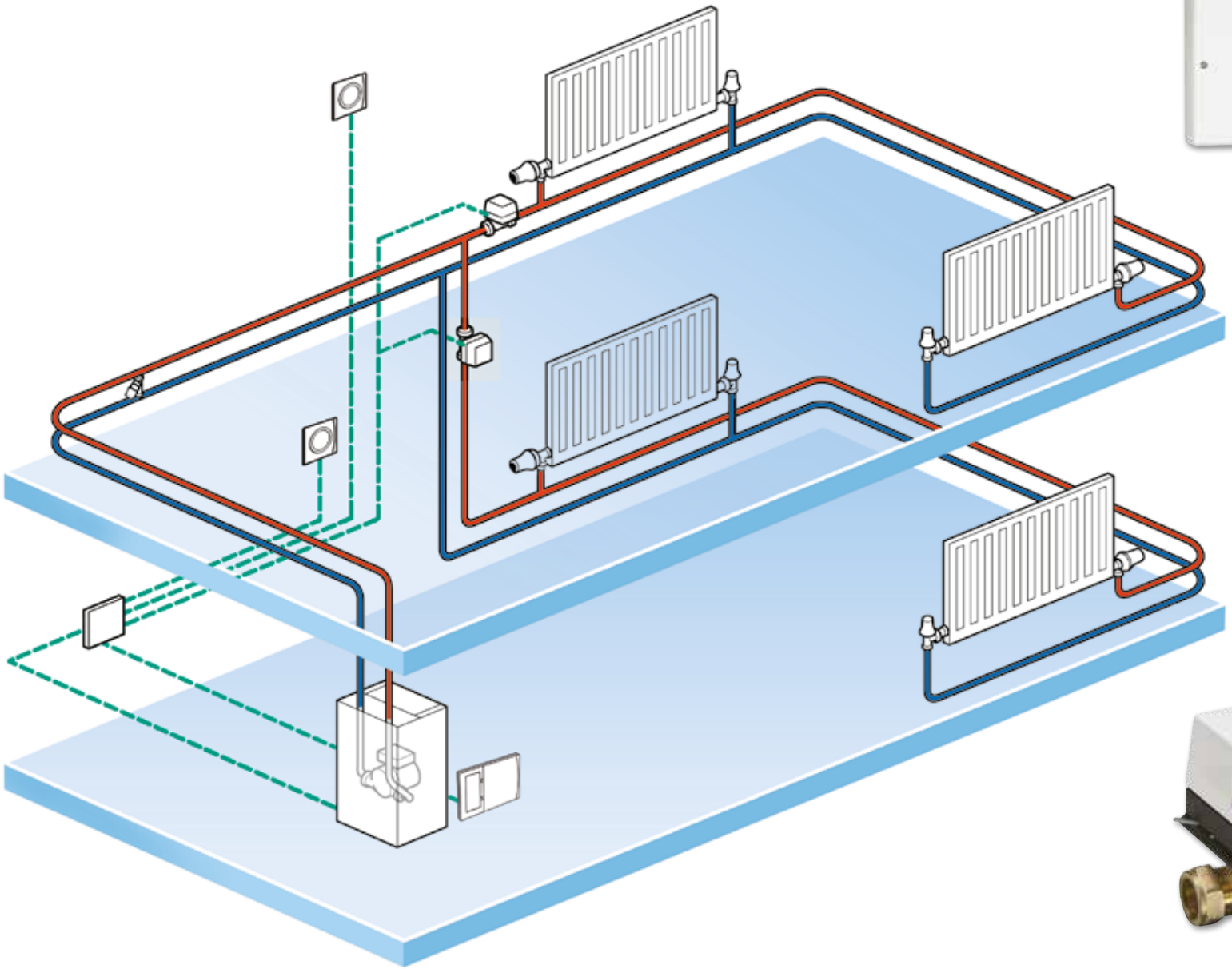
Please Note:
To save energy and increase comfort, TRVs should also be fitted on all radiators in rooms without room thermostats.

2 Zone Pack

Independent Heating Times - Combi System with Dial Thermostat

1 x FP735Si
Three channel full programmer

2 x RET1000MS
Electronic
Room Thermostat

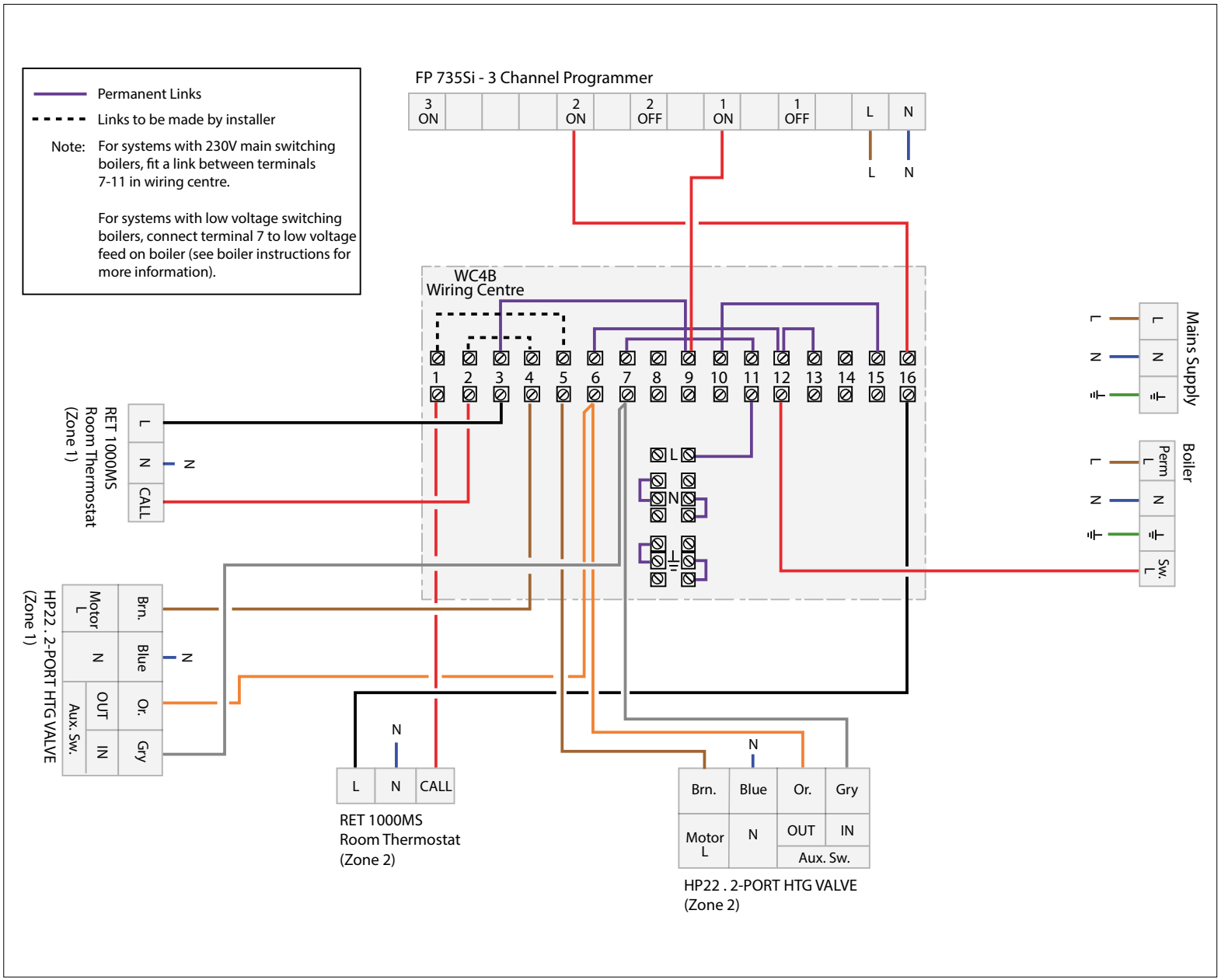


WC4B
Wiring Centre

2 x HP22
Two port valve

(Dwellings above 150m²)

Code Number **087N9501JY**



For systems using combination boilers where independent heating times for two zones are required. This pack provides heating control over two zones.

The **FP735Si** provides independent time control for both the living and sleeping zones in the system.

In addition to this, a dial setting **RET1000MS** thermostat in each of the heating zones, provides the customer with a high level of space heating comfort and control accuracy with the added benefit of Chrono-proportional control.

This pack is ideal for installations using a combination boiler where total flexibility and accurate control are demanded for each zone.

Potential savings with chrono-proportional control:

Control	Energy Saving (%)	Carbon Saving (%)
Mechanical On/Off	-	-
Electronic On/Off	**2.10**	**2.31**
Chrono-Proportional	**10.35**	**10.71**

Results based on a high efficiency condensing boiler over a 12 hour period.

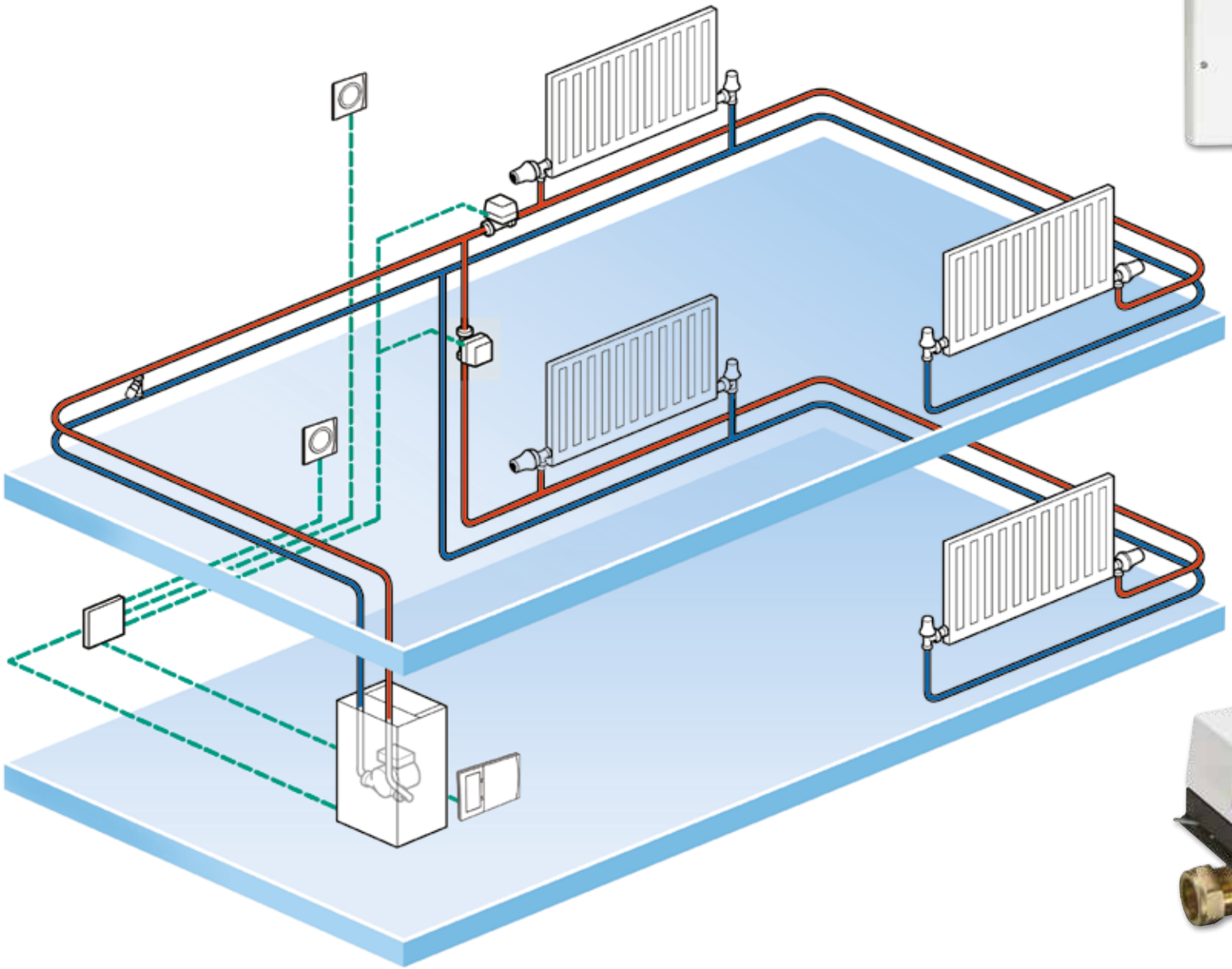
Please Note:
To save energy and increase comfort, TRVs should also be fitted on all radiators in rooms without room thermostats.

2 Zone Pack

Independent Heating Times - Combi System with Digital Thermostat

1 x FP735Si
Three channel full programmer

2 x RET2000MS
Electronic
Room Thermostat

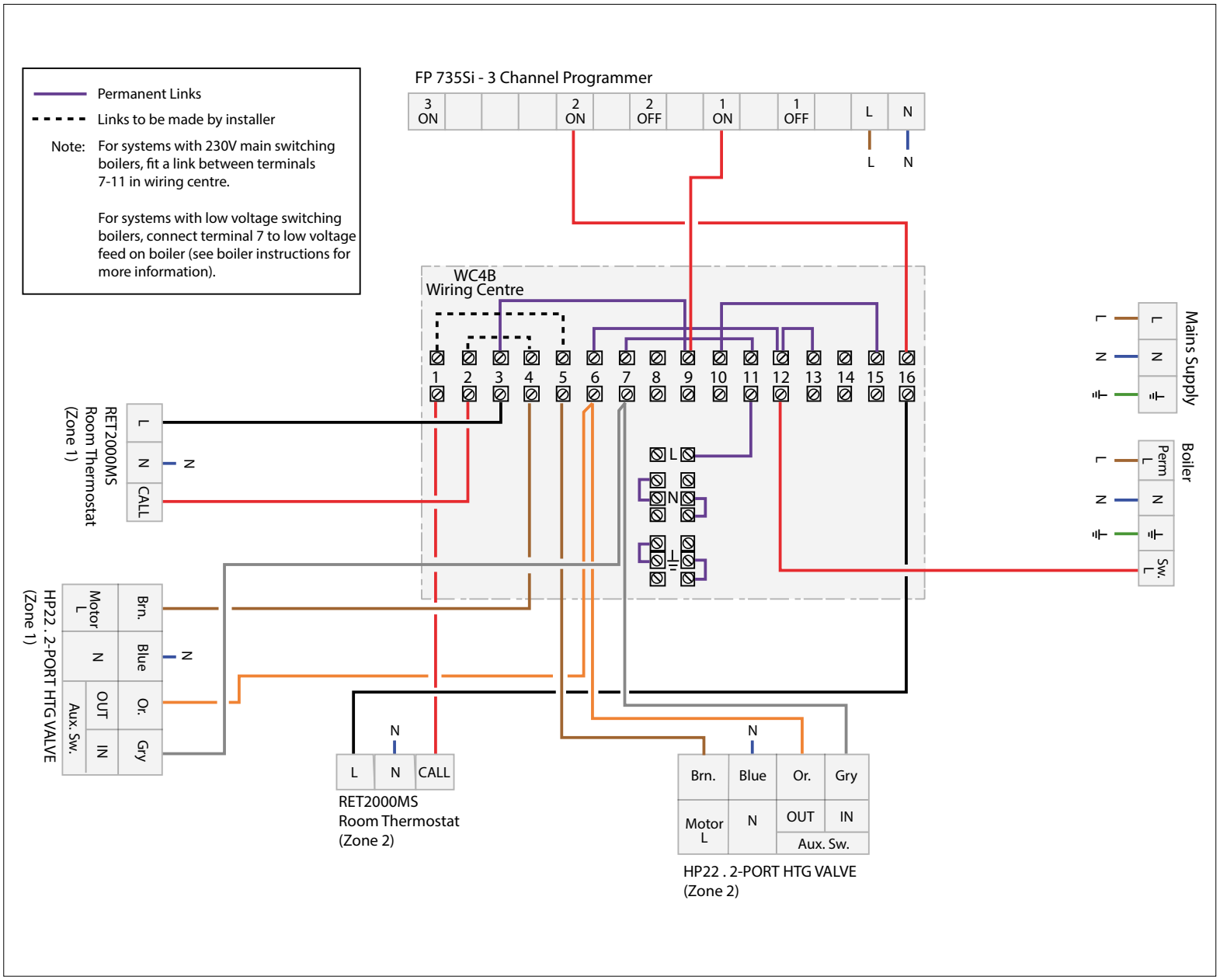


WC4B
Wiring Centre

2 x HP22
Two port valve

(Dwellings above 150m²)

Code Number **087N9501KA**



For systems using combination boilers where independent heating times for two zones are required. This pack provides heating control over two zones.

The **FP735Si** provides independent time control for both the living and sleeping zones in the system.

In addition to this, a digital setting **RET2000MS** thermostat in each of the heating zones, provides the customer with a high level of space heating comfort and control accuracy with the added benefit of Chrono-proportional control.

This pack is ideal for installations using a combination boiler where total flexibility and accurate control are demanded for each zone.

Potential savings with chrono-proportional control:

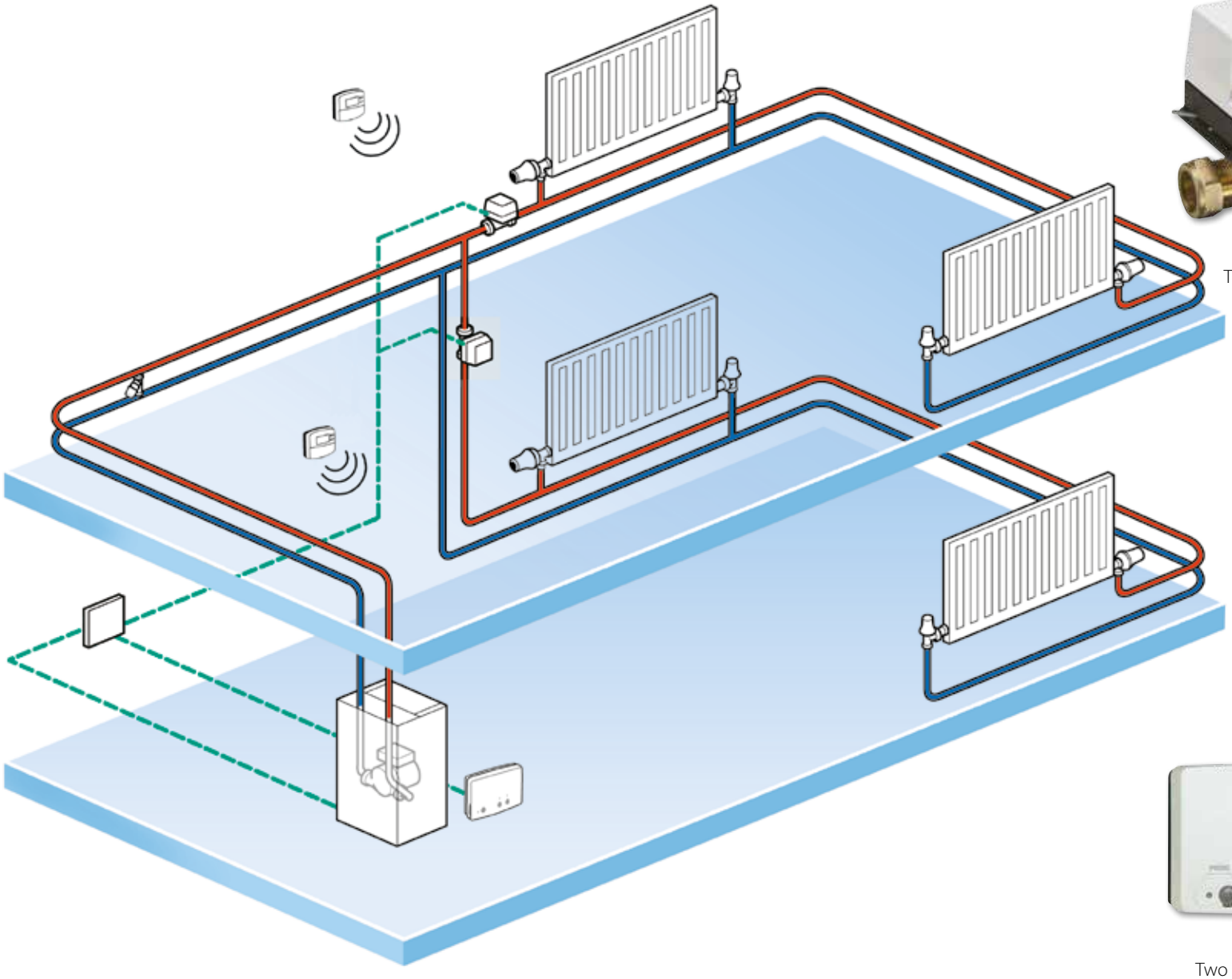
Control	Energy Saving (%)	Carbon Saving (%)
Mechanical On/Off	-	-
Electronic On/Off	**2.10**	**2.31**
Chrono-Proportional	**10.35**	**10.71**

Results based on a high efficiency condensing boiler over a 12 hour period.

Please Note:
To save energy and increase comfort, TRVs should also be fitted on all radiators in rooms without room thermostats.

2 Zone Pack

Independent Heating Times - Wireless Combi System



2 x TP5000RF-Si
Electronic Programmable
Room Thermostat

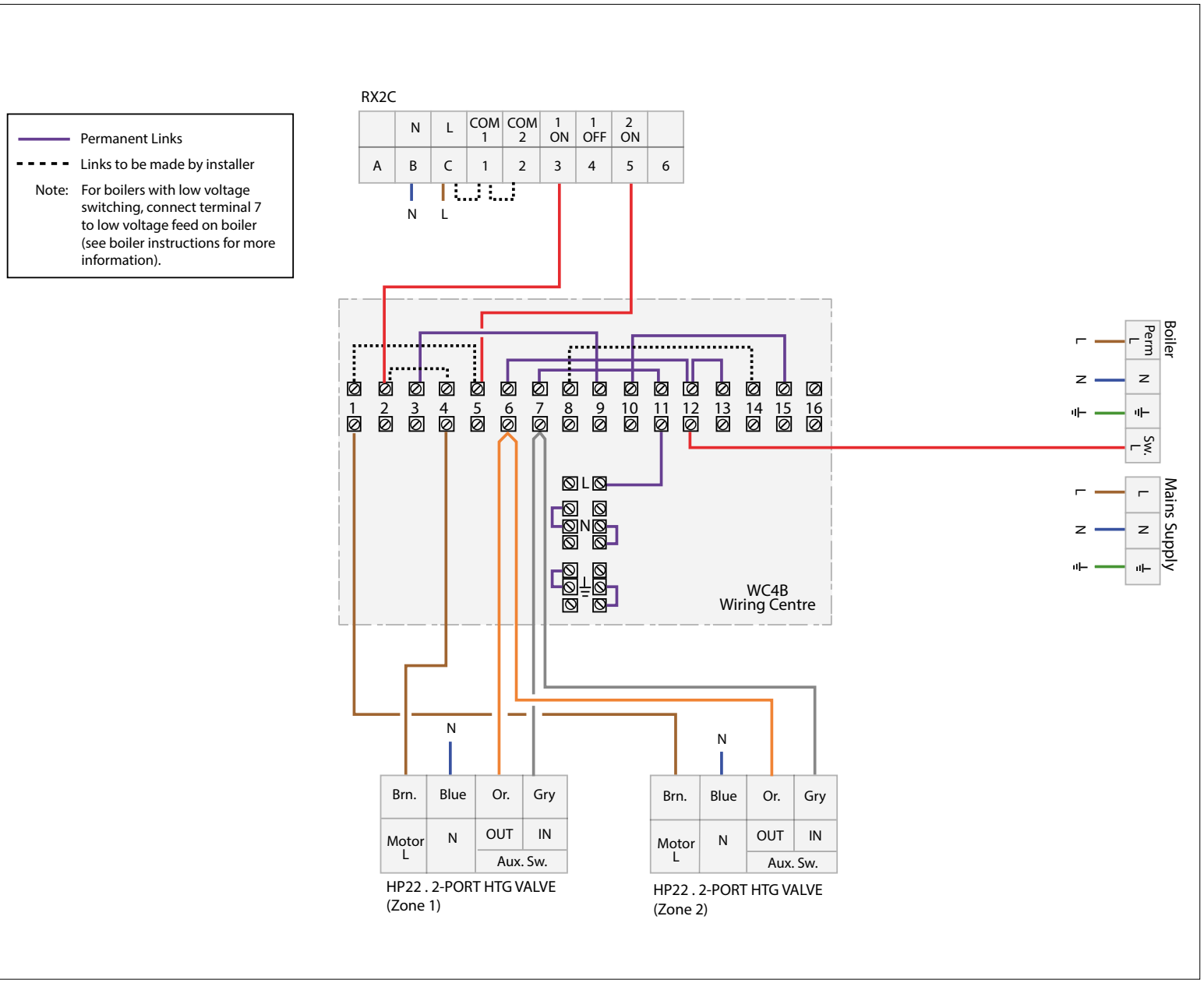
2 x HP22
Two port valve

WC4B
Wiring Centre

1 x RX2C
Two Channel Receiver

(Dwellings above 150m²)

Code Number **087N6520DG**



A wireless solution for systems with a combination boiler providing an independent timebase for both heating zones.

Ideal for situations where running wires is difficult or impossible, the wireless packs provide ease of installation as well as a simple setup with reliable operation.

For full independent heating zone control in a system where a combi boiler is used the **TP5000Si-RF** provides the solution.

Offering programmable times and temperatures, the **TP5000Si-RF**, when using the chrono proportional control system can save the occupier up to 10% on their heating bills per year.

The added flexibility of the wireless system means the siting of the thermostats is no longer limited to where wires can be easily run.

This pack is ideal for installations using a combi boiler where fixed wiring is impractical and full independent timed control of both heating zones is required.

Potential savings with chrono-proportional control:

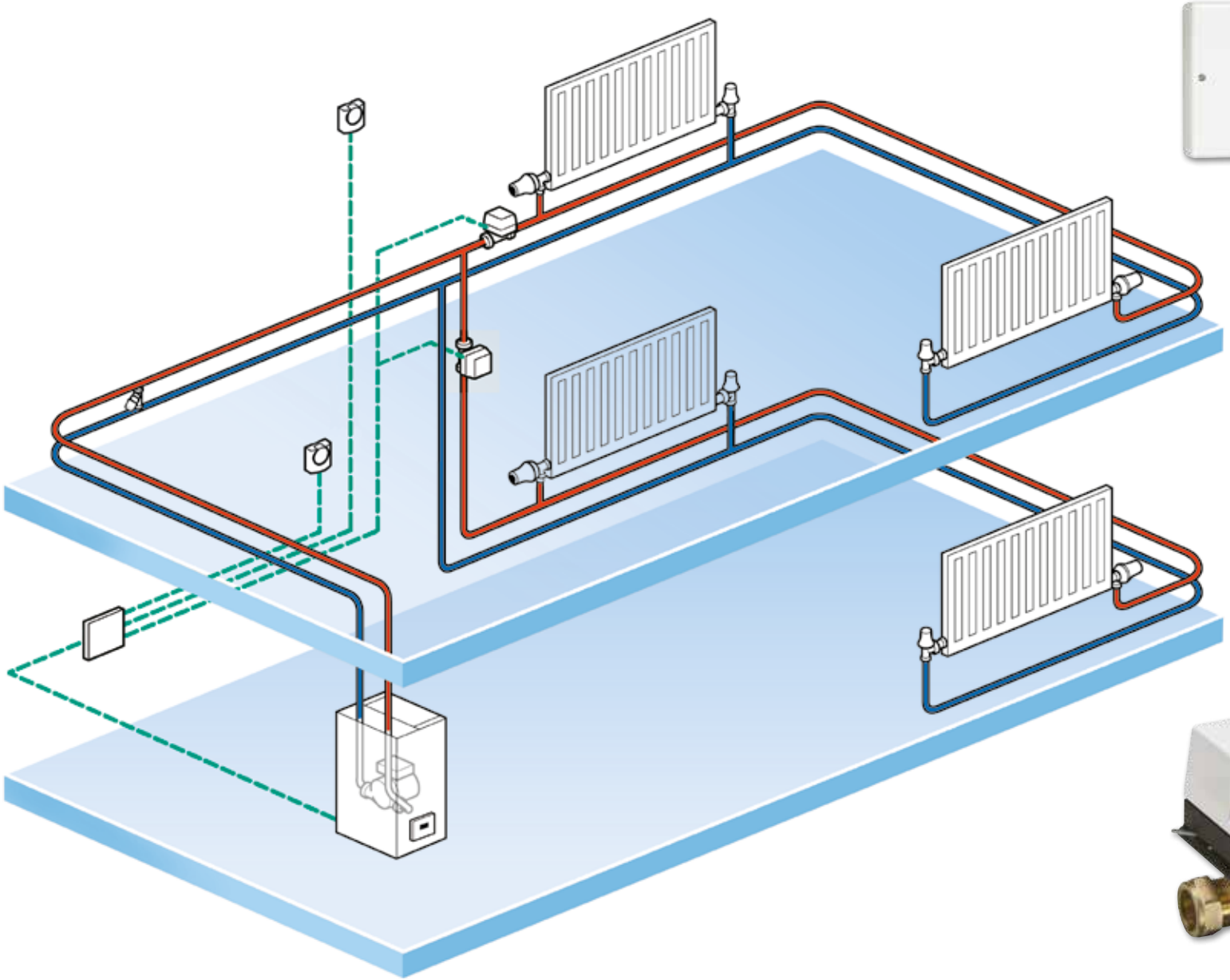
Control	Energy Saving (%)	Carbon Saving (%)
Mechanical On/Off	-	-
Electronic On/Off	**2.10**	**2.31**
Chrono-Proportional	**10.35**	**10.71**

Results based on a high efficiency condensing boiler over a 12 hour period.

Other
Useful Packs

2 Zone Pack

Integral Boiler Timer – Combi System

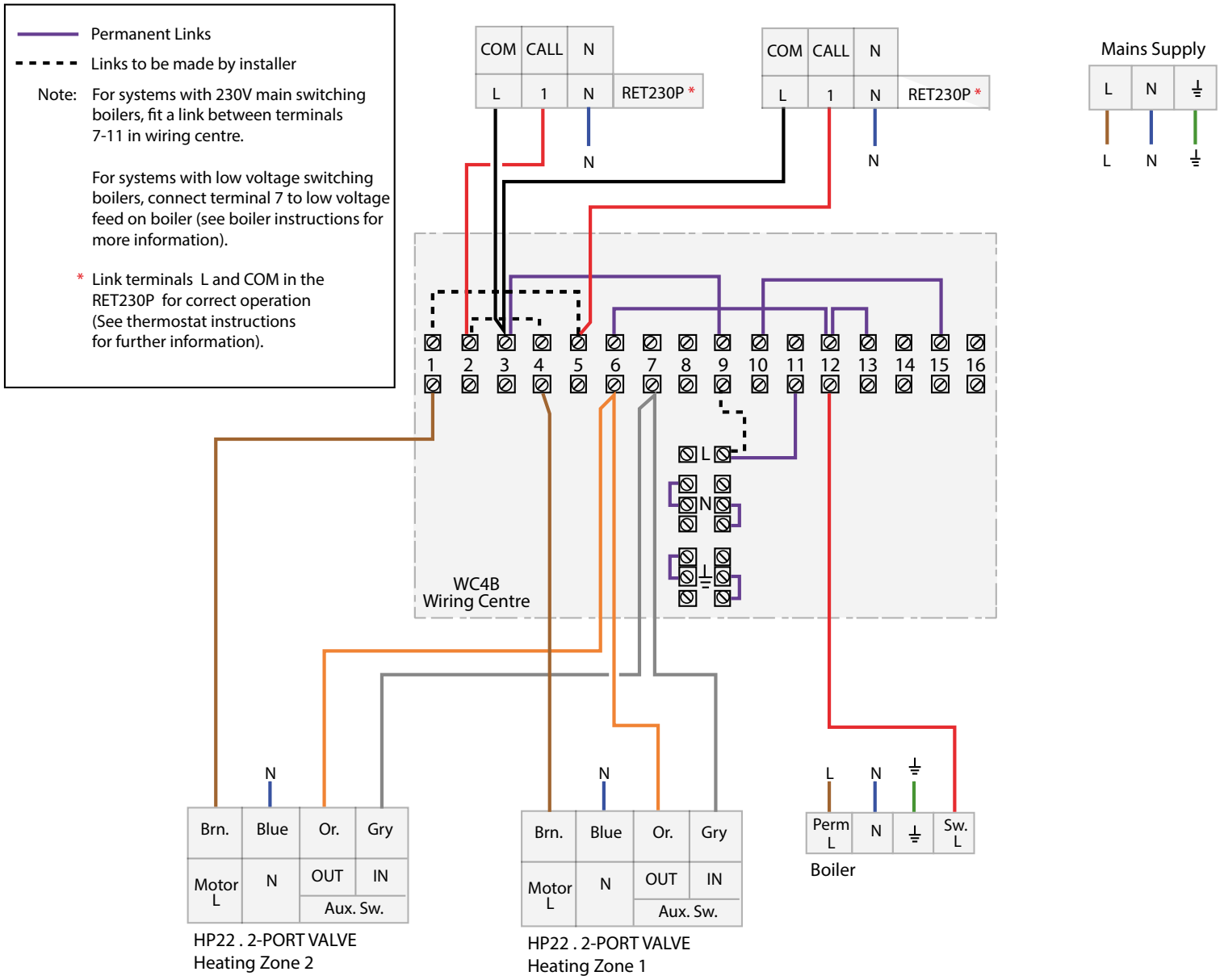


2 x RET230P
Electronic Room Thermostat

WC4B
Wiring Centre

2 x HP22
Two port valve

Code Number **087N6520S7**



For systems using combination boilers with an integral timeclock; this pack provides heating control over two zones with a common timebase.

The addition of two **RET230P** electronic room thermostats and two **HP22** motorised valves to the combi boiler system provides zone control to both the living and the sleeping areas of the house enabling different comfort levels to be set, saving energy and increasing comfort for the occupier.

This pack is ideal for installations using a combination boiler that is provided with its own integral timeclock.

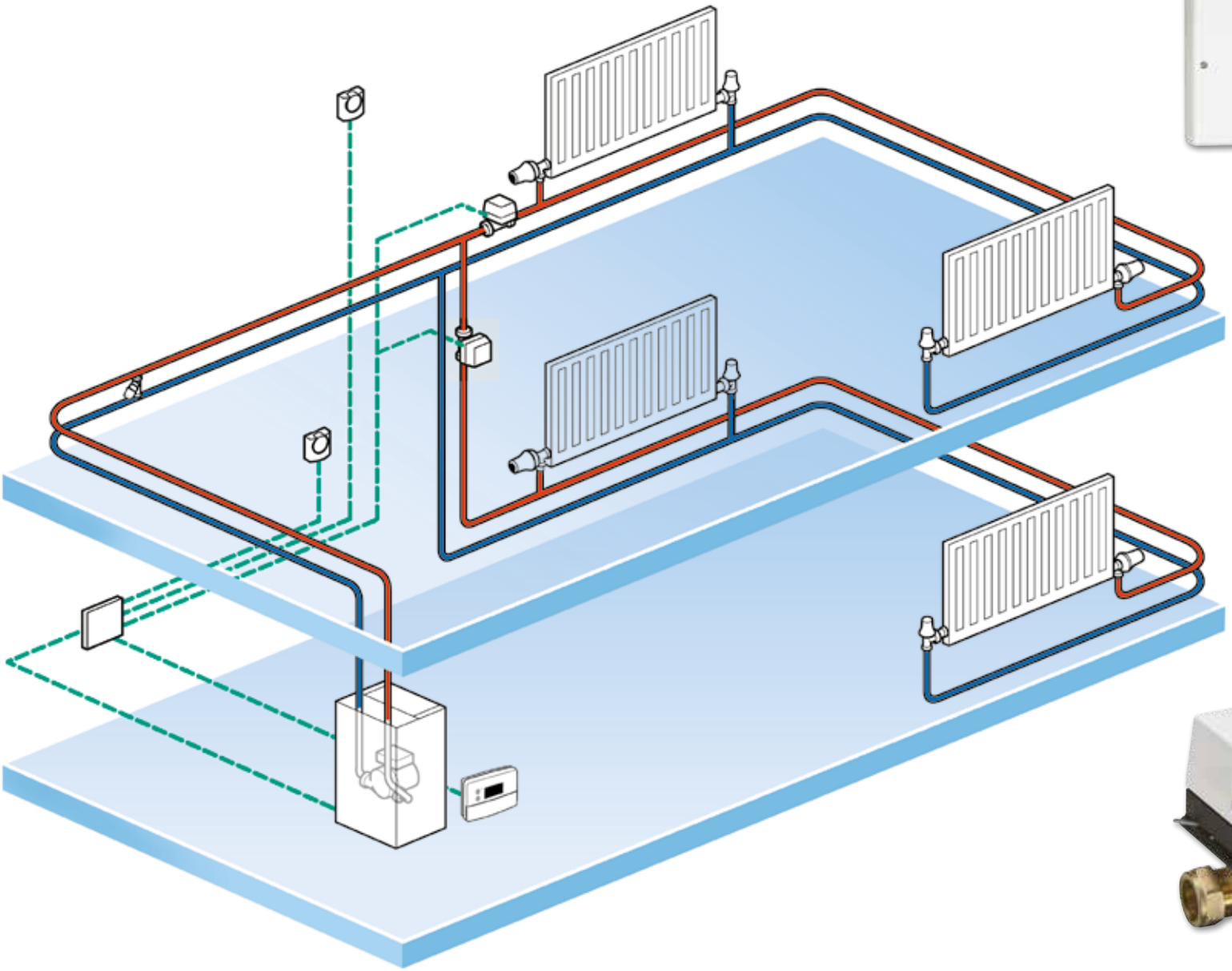
Please Note:
To save energy and increase comfort, TRVs should also be fitted on all radiators in rooms without room thermostats.

2 Zone Pack

Common Heating Times – Combi System without Timeswitch

1 x TS715Si
Single Channel Timeswitch

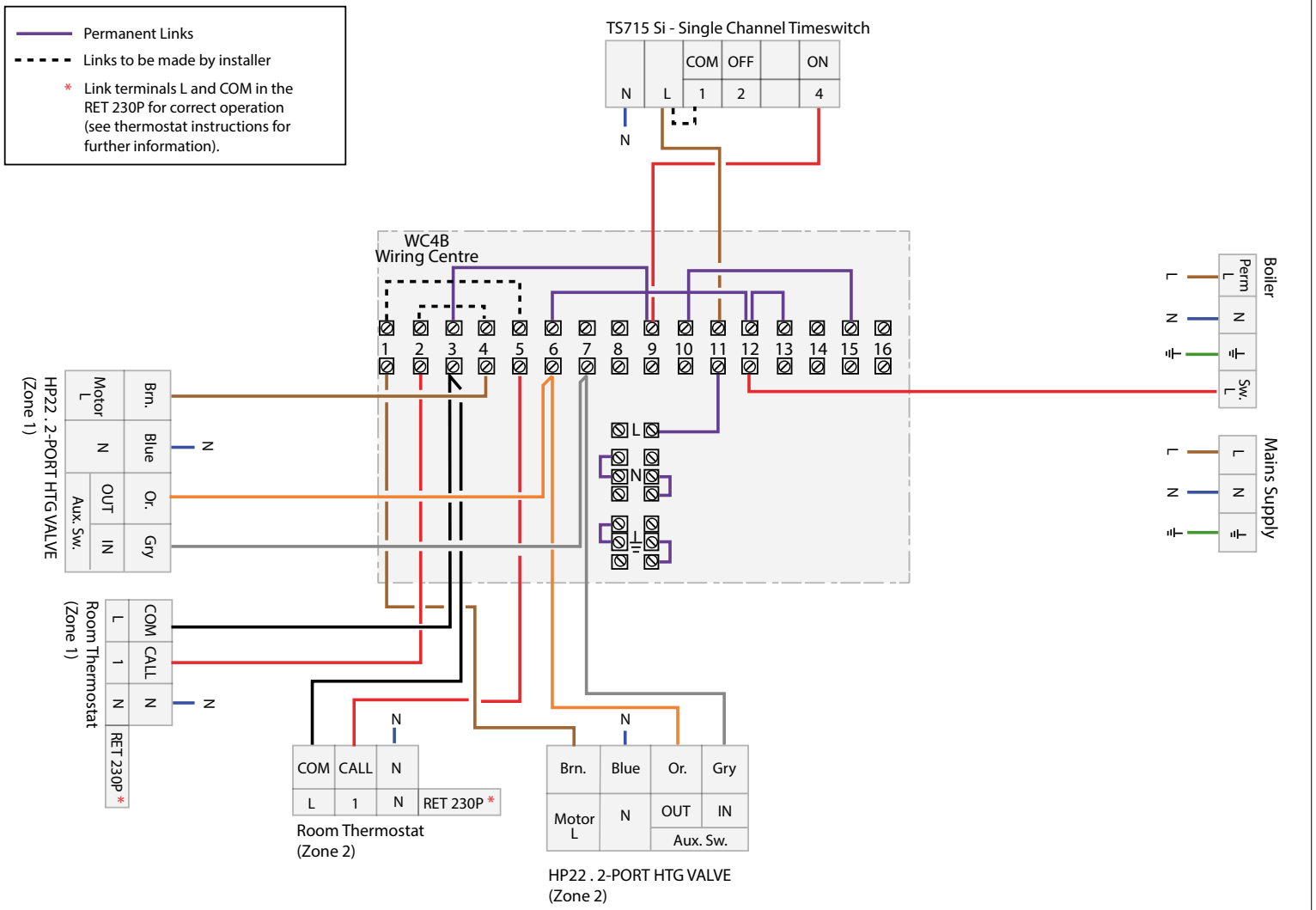
2 x RET230P
Electronic Room Thermostat



WC4B
Wiring Centre

2 x HP22
Two port valve

Code Number **087N6517S7**



For systems using combination boilers where an external timeclock is required. This pack provides heating control over two zones with a common timebase.

The addition of two **RET230P** electronic room thermostats and two **HP22** motorised valves to the combi boiler system provides zone control to both the living and the sleeping areas of the house enabling different comfort levels to be set, saving energy and increasing comfort for the occupier.

This pack is ideal for installations using a combination boiler that is not provided with its own integral timeclock, or for installations where a timeclock is required externally to the combi boiler.

Please Note:
To save energy and increase comfort, TRVs should also be fitted on all radiators in rooms without room thermostats.

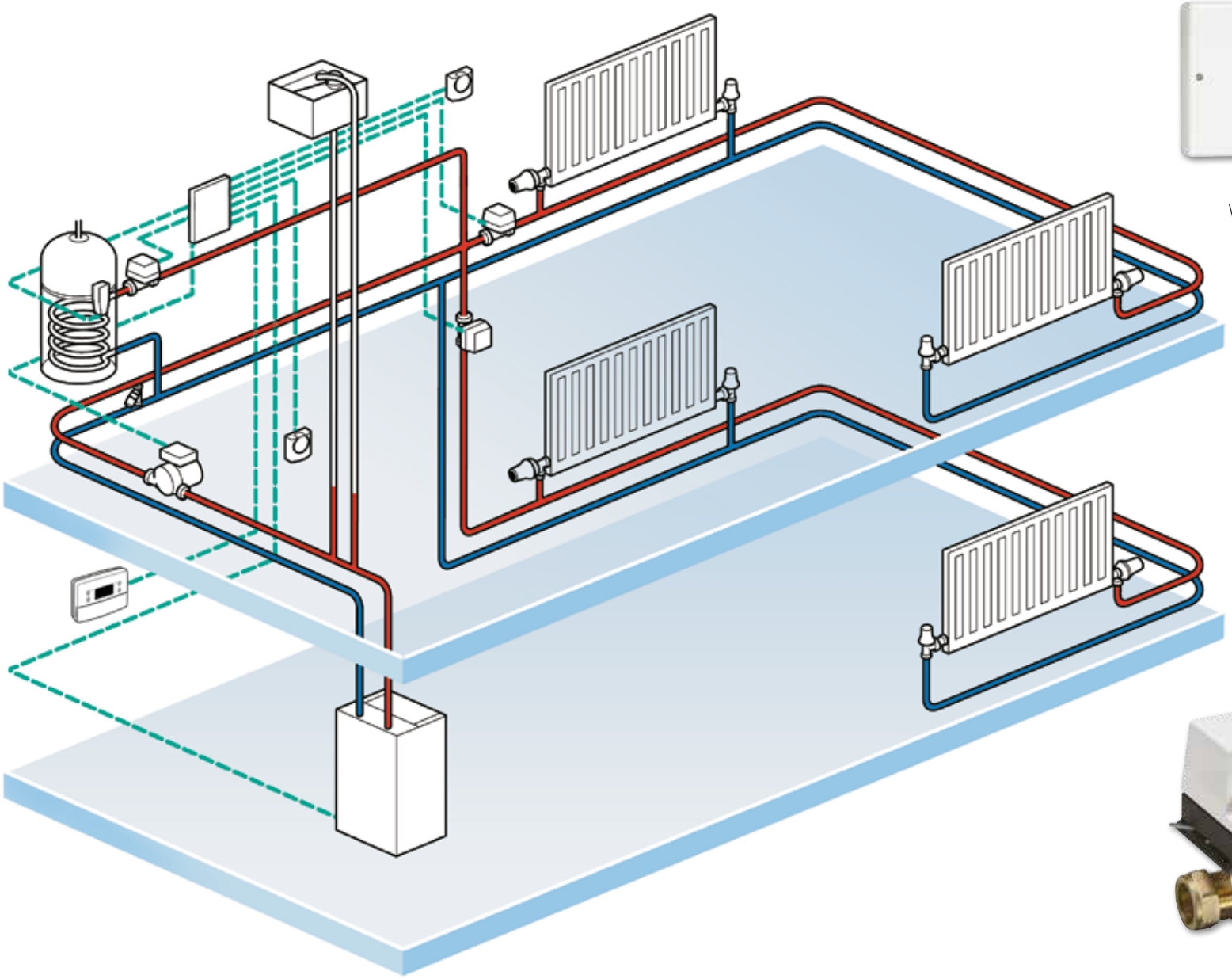
3 Zone Pack

Common Heating Times

1 x FP715Si
Two channel full programmer

2 x RET230P
Electronic Room Thermostat

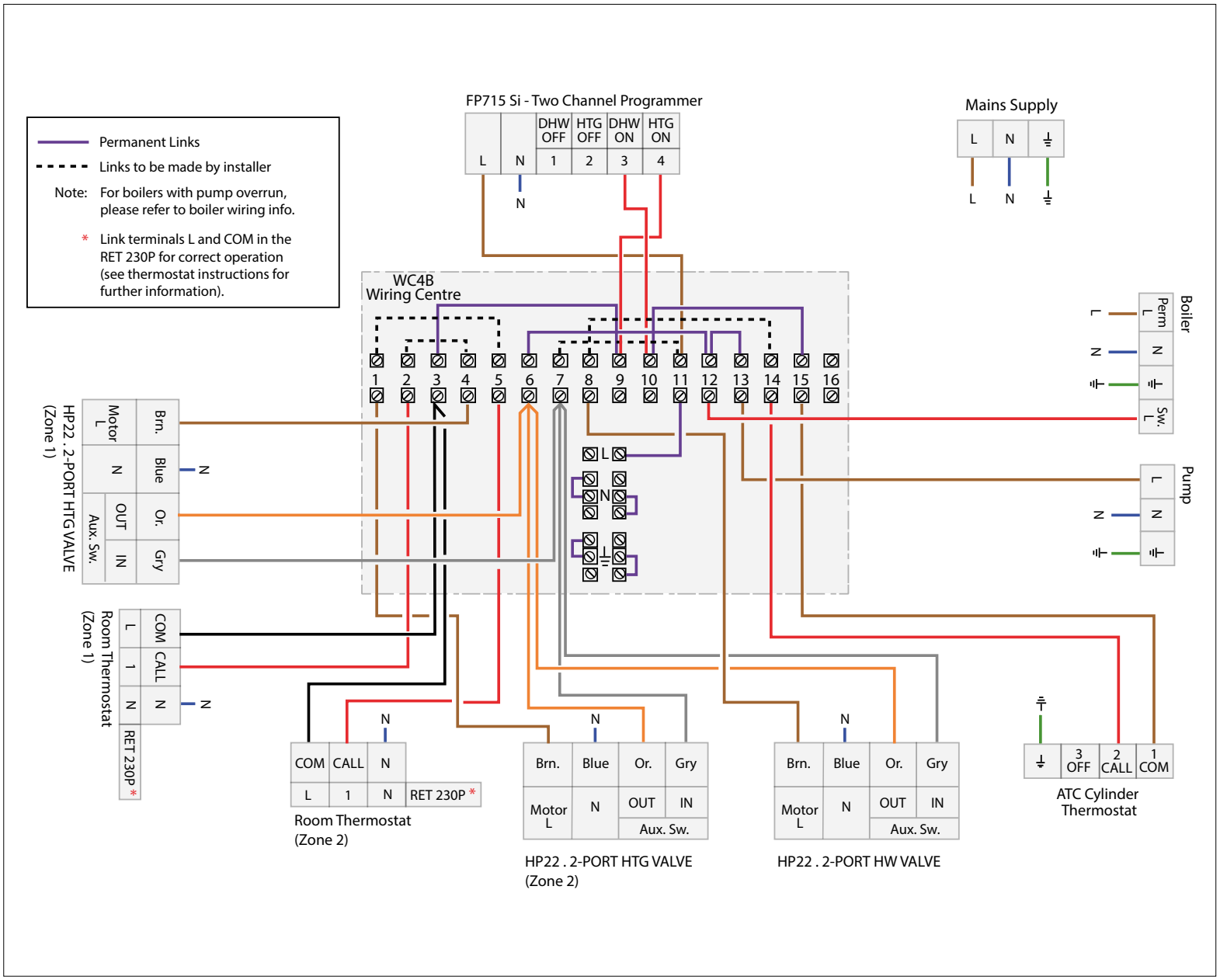
1 x ATC
Cylinder Thermostat



1 x WC4B
Wiring Centre

3 x HP22
Two port valve

Code Number **087N6500X1**



Providing common times for both heating zones and a separate timed hot water zone this pack fulfils the minimum control requirements for dwellings under 150m² using a vented hot water cylinder.

The **FP715Si** two channel timer is used to provide time control for the heating and hot water zones.

Dial setting **RET230P** thermostats provide the customer with a high level of space heating comfort and control accuracy.

Hot water control is achieved using an **ATC** cylinder thermostat which is easy to install and set.

This pack is ideal for installations using a standard hot water cylinder.

Please Note:
To save energy and increase comfort, TRVs should also be fitted on all radiators in rooms without room thermostats.

3 Zone Pack

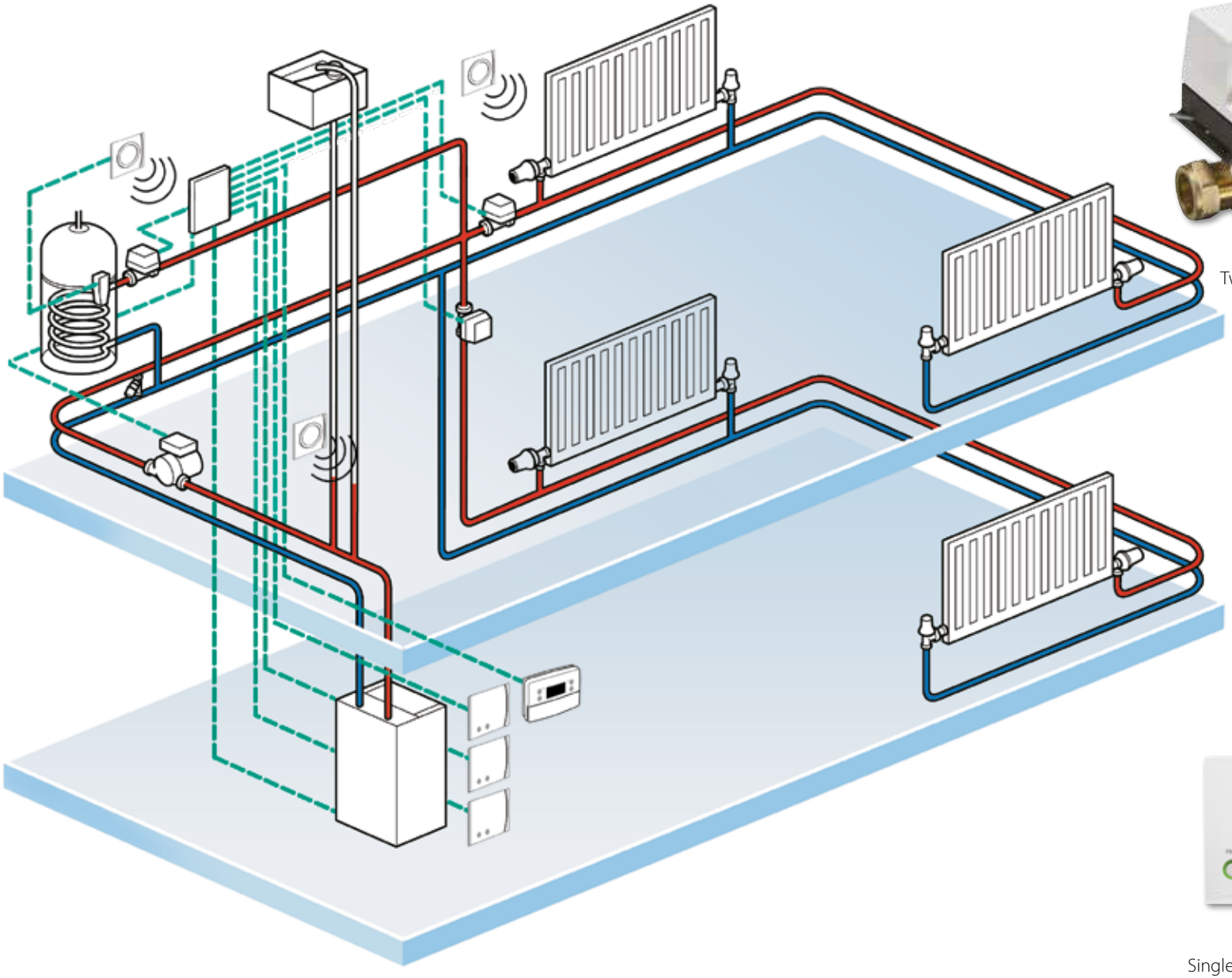
Common Heating Times – Wireless System

1 x FP715Si
Two channel full programmer

2 x RET2000B-RF
Wireless Electronic
Room Thermostat

1 x CET2000B-RF
Wireless Cylinder Thermostat

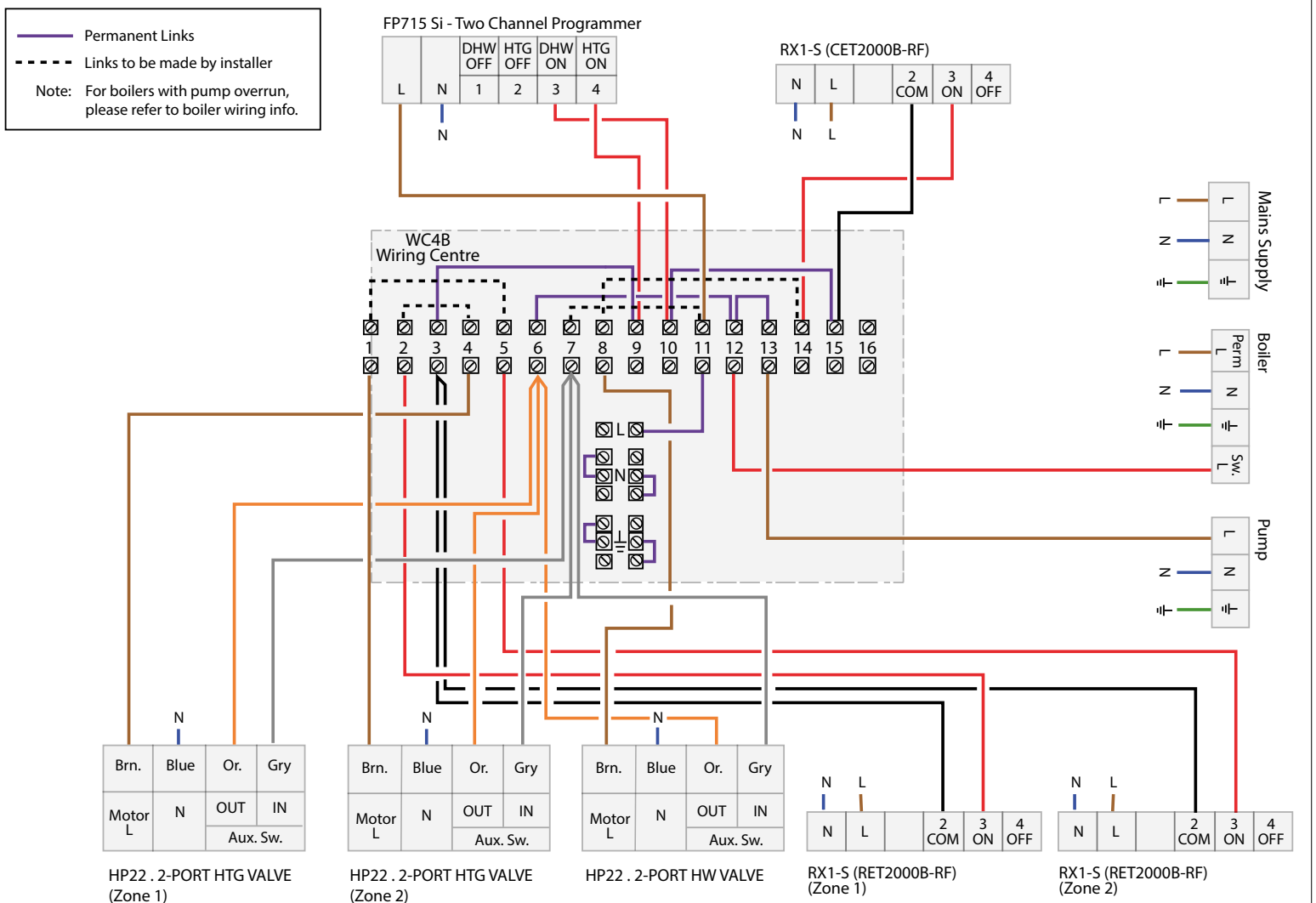
WC4B
Wiring Centre



3 x HP22
Two port valve

3 x RX1-S
Single Channel Receiver

Code Number **087N6500CB**



A wireless solution for systems with a vented hot water cylinder providing a common timebase for both heating zones and a separate timed channel for hot water control.

Ideal for situations where running wires is difficult or impossible, the wireless packs provide ease of installation as well as a simple setup with reliable operation.

The **FP715Si** programmer and the two **RET2000B-RF** wireless room thermostats provide a common timebase for both heating zones. The **CET2000B-RF** provide wireless hot water thermostat capability.

All Danfoss wireless products use a secure digital radio communication system to ensure reliability and eliminate the possibility of interference with other wireless devices in the home.

This pack is ideal for installations using a vented hot water cylinder where fixed wiring is impractical or undesirable.

Potential savings with chrono-proportional control:

Control	Energy Saving (%)	Carbon Saving (%)
Mechanical On/Off	-	-
Electronic On/Off	**2.10**	**2.31**
Chrono-Proportional	**10.35**	**10.71**

Results based on a high efficiency condensing boiler over a 12 hour period.

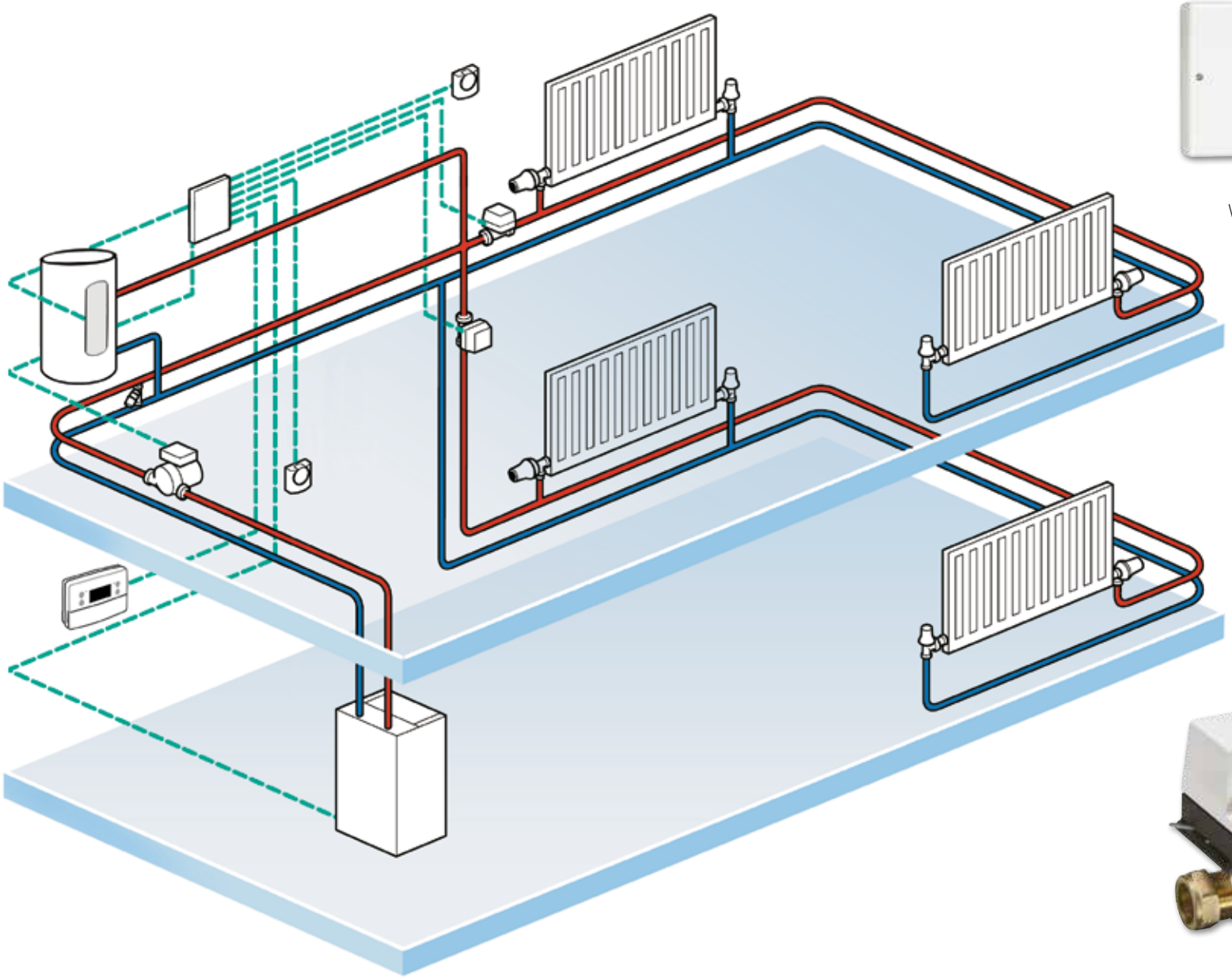
Please Note:
To save energy and increase comfort, TRVs should also be fitted on all radiators in rooms without room thermostats.

3 Zone Pack

Common Heating Times – Unvented System

1 x FP715Si
Two channel full programmer

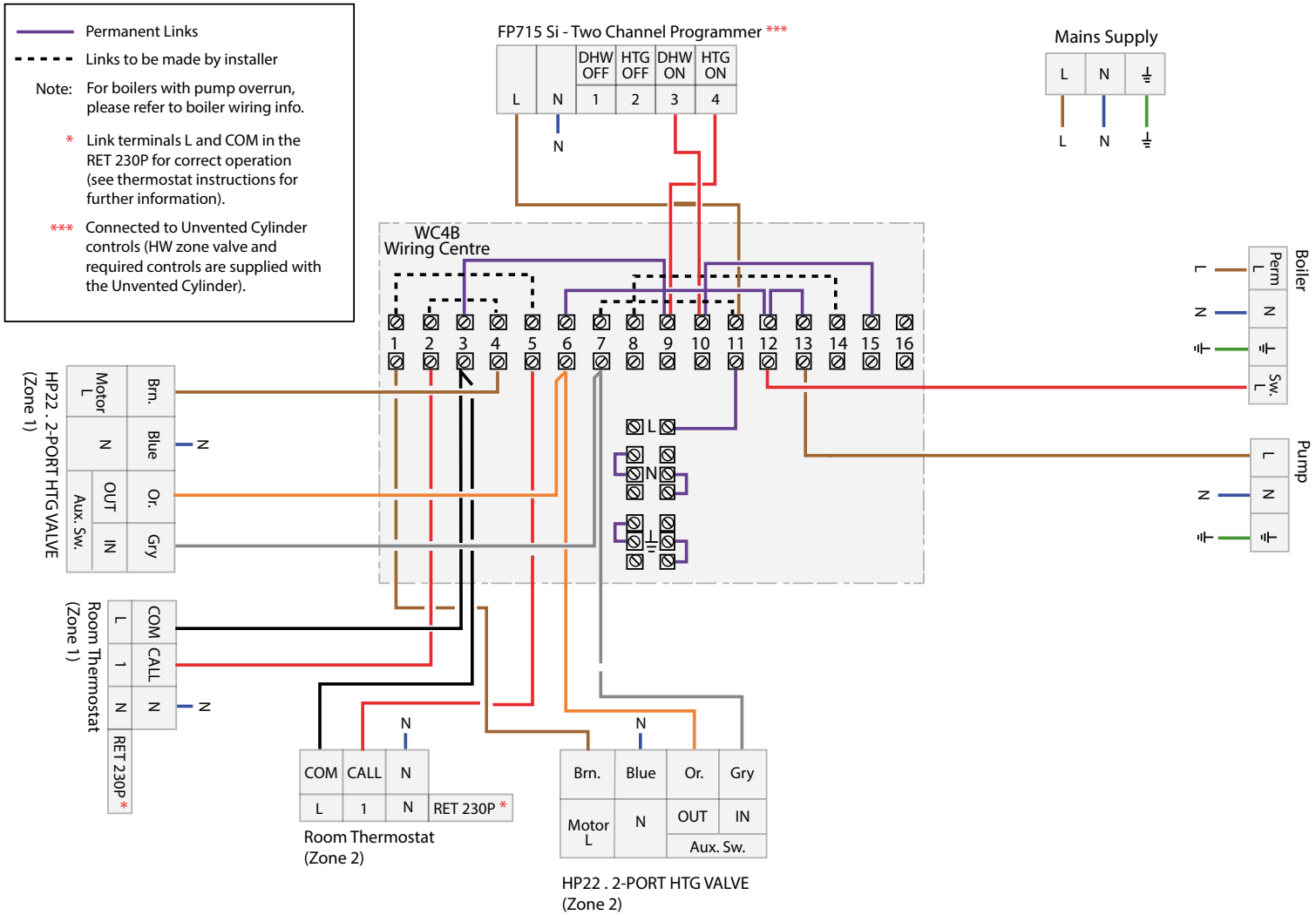
2 x RET230P
Electronic Room Thermostat



WC4B
Wiring Centre

2 x HP22
Two port valve

Code Number **087N6500S7**



Providing common times for both heating zones and a separate timed hot water zone.

The **FP735Si** three channel programmer is used to provide time control for the heating and hot water zones.

Dial setting **RET230P** thermostats provide the customer with a high level of space heating comfort and control accuracy.

Hot water control is achieved using the controls pre-fitted to the unvented hot water cylinder – for wiring and installation details of these please contact the cylinder manufacturer.

This pack is ideal for installations using a standard unvented hot water cylinder.

Please Note:
To save energy and increase comfort, TRVs should also be fitted on all radiators in rooms without room thermostats.

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