



Heating Controls Wiring Guide

Issue 19

PROUD TO SUPPORT
THE PROFESSIONAL
INSTALLER

PROUD TO BE
MANUFACTURED
IN SCOTLAND

This guide contains wiring advice to assist with installing Honeywell Home heating controls in a variety of systems. Our range includes many wired and wireless models and this guide will help you complete the required wiring.

ALL WIRING SHOULD BE CARRIED OUT BY A COMPETENT INSTALLER OR ELECTRICIAN.

Any boiler. Any system

Our heating controls are compatible with any boiler and any system, including 24–230V on/off and OpenTherm® appliances such as gas & oil boilers, combi boilers and heat pumps.

The wireless versions also control zone valve applications that provide time control of stored domestic hot water, and two heating zone applications (S Plan Plus).



**ALL OF OUR PROGRAMMABLE THERMOSTATS
ARE BOILER PLUS COMPLIANT**

These wiring diagrams are for guidance only and at the time of publication represent the latest information available to us from other manufacturers. We reserve the right at any time and without notice to change any product, specification or any other information contained in this publication and cannot accept any responsibility for loss or damage arising out of any errors that may inadvertently be contained herein.

Whilst we take all reasonably practical steps to design and manufacture its products to comply with the requirements of the Health and Safety at Work Act 1974, all products must be properly used and purchasers are reminded that their obligations under the Act are to ensure that the installation and operation of such products at a place of work should be safe and without risk to them.

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System wiring notes

The diagrams in this guide are designed for ease of wiring to a 10 way junction box. Where three plans are illustrated there is one for wired, wireless and wireless enabled controls.

These diagrams should be read in conjunction with product installation instructions.



10 way junction box
42002116-001

ALL WIRING MUST BE IN ACCORDANCE WITH IET & BUILDING REGULATIONS AND IN SOME CASES, NOTIFIABLE TO BUILDING CONTROL.

A switch (having contact separation of at least 3mm in all poles) must be incorporated in the fixed wiring as a means of disconnecting the mains supply.

The heating system must be appropriately fused for attached appliances. Diagrams refer only to 3 amp fuses for gas appliances throughout. Use a 5 amp fuse for oil where appropriate.

The T6360B room thermostat, L641A cylinder thermostat and Honeywell Home range of programmers are Class II (double insulated) devices. Earth terminals, where provided, are for earth parking purposes only. All earth conductors inside the programmer and room thermostat must be appropriately sleeved.

The zone valves are Class I devices and must be connected to a suitable earth.



Download the new Honeywell Home 'Wiring Guide' app



We are proud of our people, quality and technology



Newhouse, Scotland



Anechoic testing



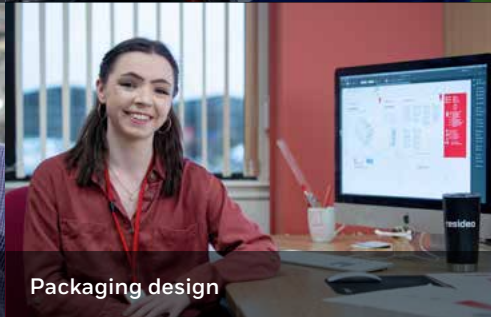
Circuit board manufacture



Plastic moulding



In line testing



Packaging design

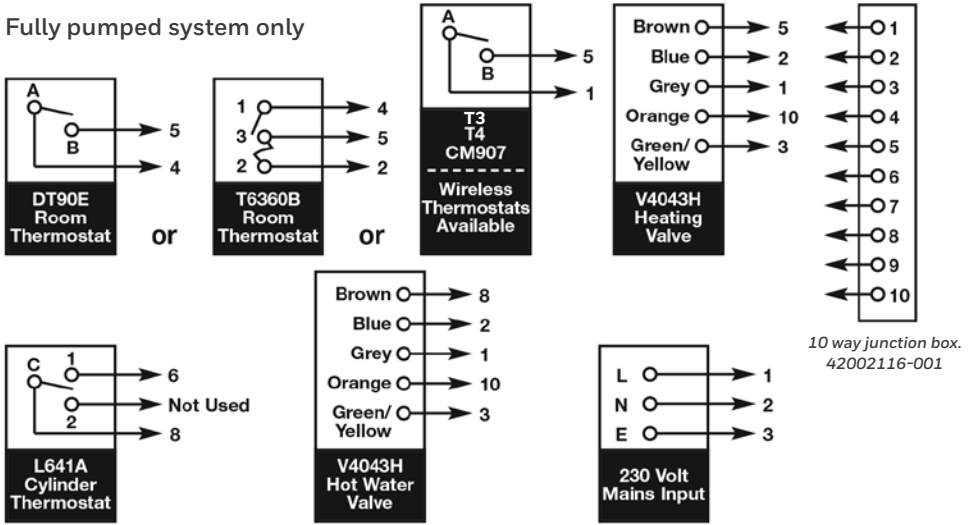
**PROUD TO BE
MANUFACTURED
IN SCOTLAND**

Our time and temperature controls are manufactured in our state-of-the-art factory based in Newhouse in Scotland. Using the latest technology and automation, our skilled engineers and technicians are proud to be producing quality products that are distributed to our customers across the world.

S Plan

If using a 6 wire or 1" BSP V4043H on either circuit, the white wire is not needed and must be made electrically safe.

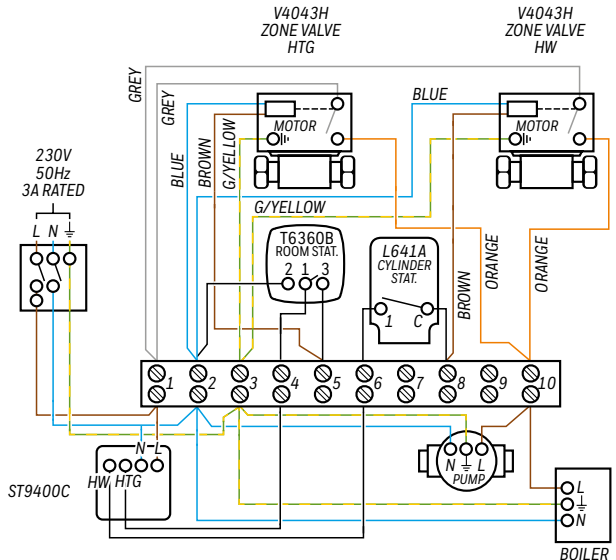
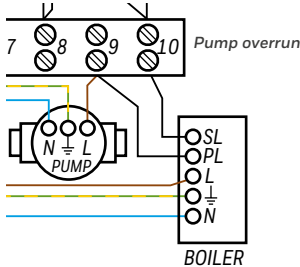
Fully pumped system only



Wired

Note:

1. It is recommended that either the 10 way junction box or Sundial wiring centre should be used to ensure first time, fault free wiring.
2. If using the V4043H1080 (1" BSP) or V4043H1106 (28mm), the white wire must be electrically isolated.

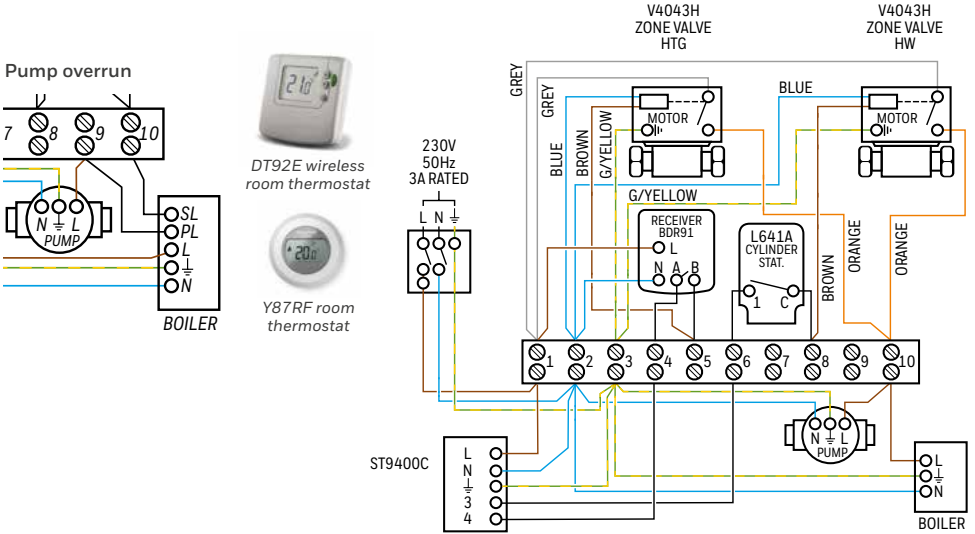


S Plan

Wireless room thermostat

Note:

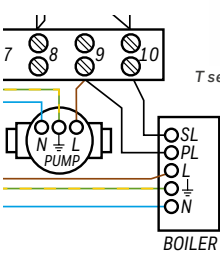
1. It is recommended that either the 10 way junction box or Sundial wiring centre should be used to ensure first time, fault free wiring.
2. If using the V4043H1080 (1" BSP) or V4043H1106 (28mm), the white wire must be electrically isolated.
3. The same terminal numbers are used on the receiver for both the DT92E and Y87RF wireless room thermostats.



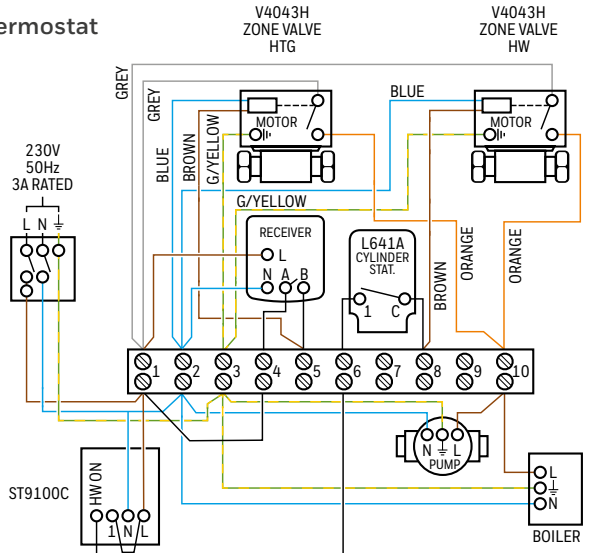
S Plan

Wireless programmable room thermostat

Pump overrun



T series programmable thermostats

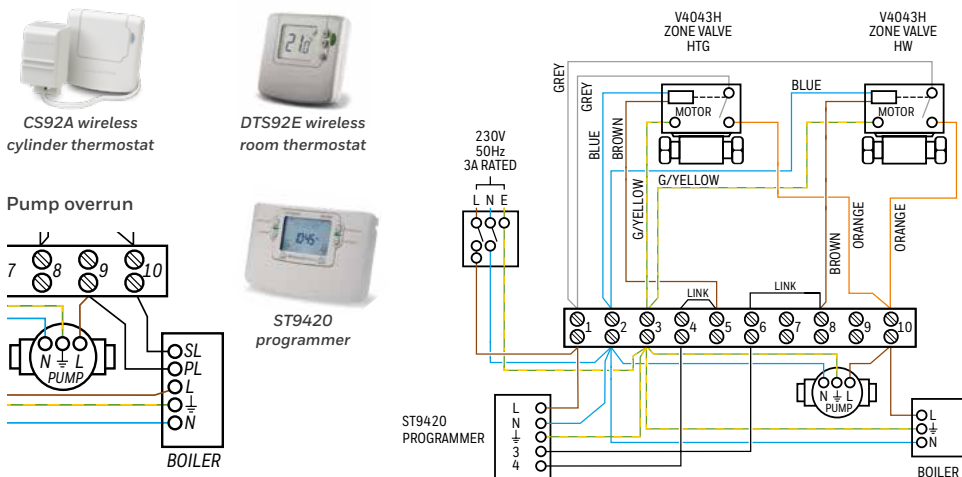


S Plan

Wireless enabled room and cylinder thermostat (Sundial RF² Pack 3)

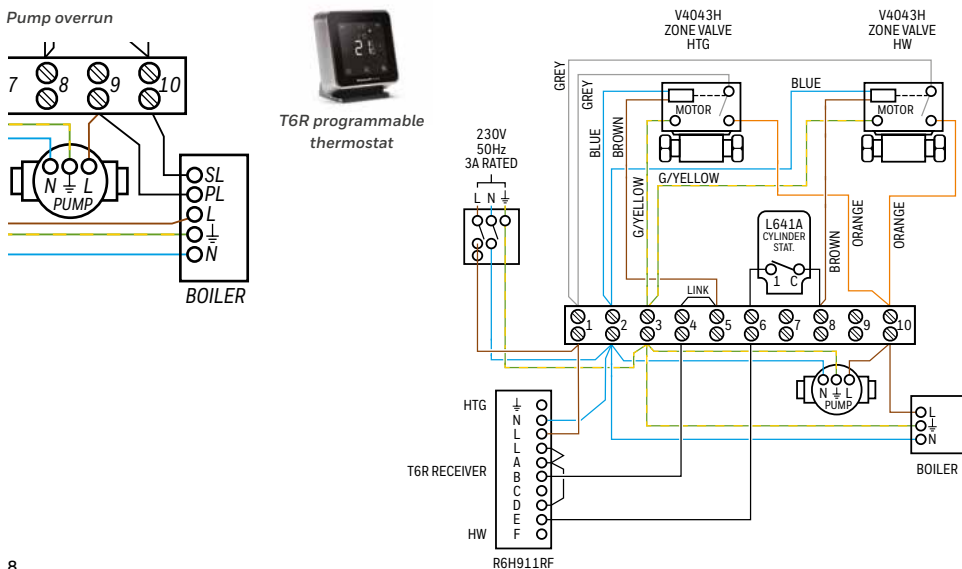
Note:

1. It is recommended that either the 10 way junction box or Sundial wiring centre should be used to ensure first time, fault free wiring.
2. If using the V4043H1080 (1" BSP) or V4043H1106 (28mm), the white wire must be electrically isolated.
3. If replacing an old wired thermostat remove cabling and add a link between terminals 4 and 5 as shown.



S Plan

T6R series smart thermostat with timed hot water control



S Plan

T6R series smart thermostat (2 zone heating) on/off



T6R table stand

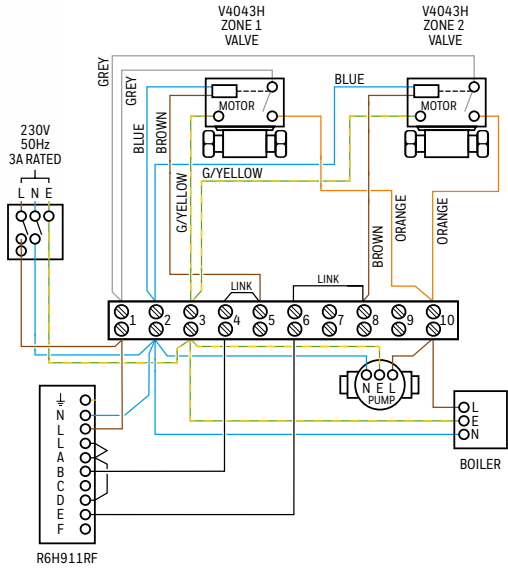
OR



T6R wall mount



Receiver module
R6H911RF



S Plan

T6R series smart thermostat (2 zone heating) OpenTherm



T6R table stand

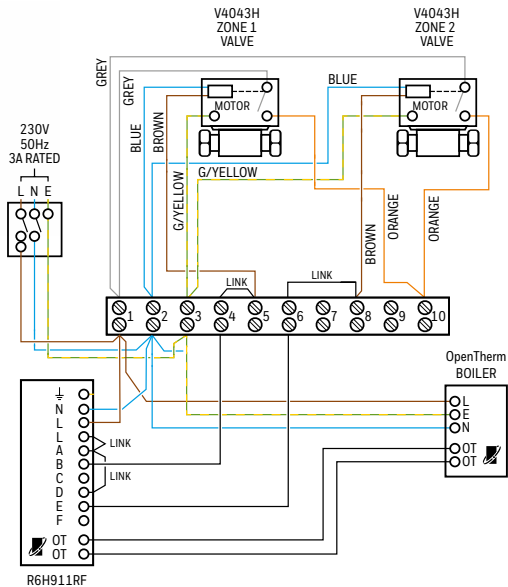
OR



T6R wall mount



Receiver module
R6H911RF



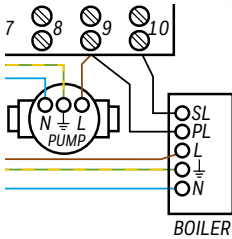
S Plan

Wired digital thermostat

Note:

- When using a T4 or T3 programmable thermostat with an existing ST9400C, please remember to set the programmer to continuous to allow a live feed to the thermostat.

Pump overrun



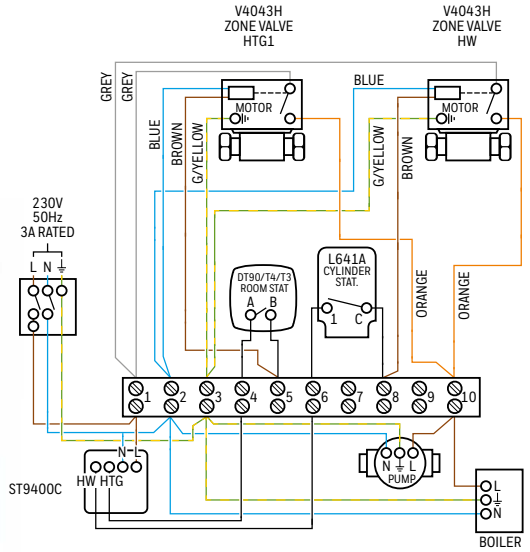
DT90E wired



T3 wired



T4 wired



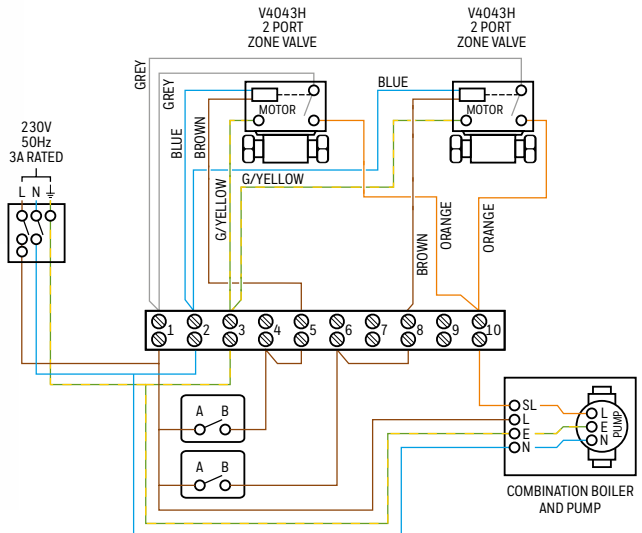
S Plan

Combination boiler T series programmable thermostat (2 zone heating) on/off

T3 wired



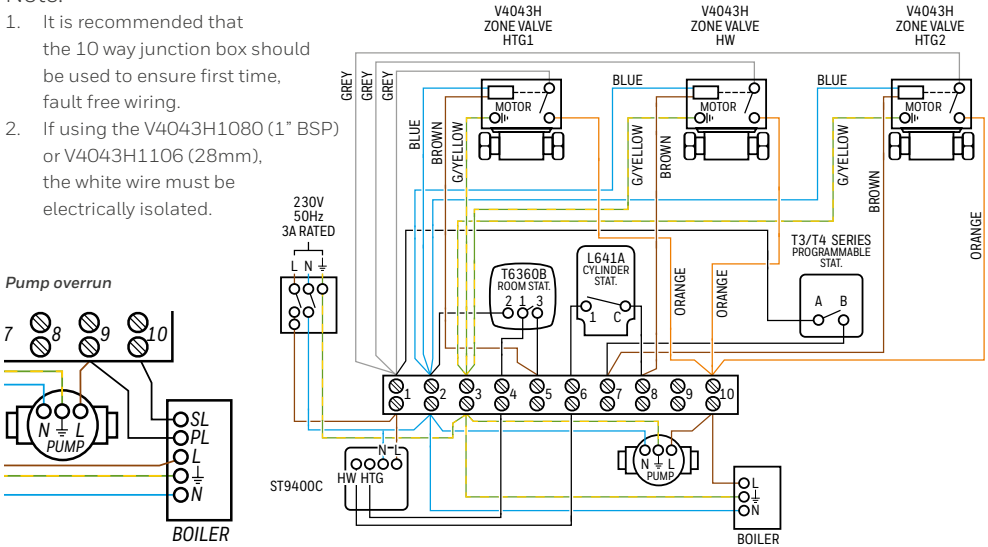
T4 wired



S Plan Plus

Note:

1. It is recommended that the 10 way junction box should be used to ensure first time, fault free wiring.
2. If using the V4043H1080 (1" BSP) or V4043H1106 (28mm), the white wire must be electrically isolated.



S Plan Plus

T6R series smart thermostat with timed hot water control



T6R table stand

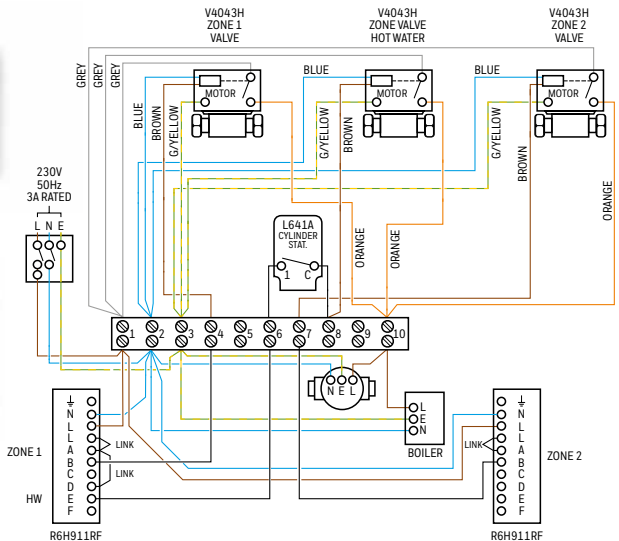
T6R wall mount



Receiver module
R6H911RF

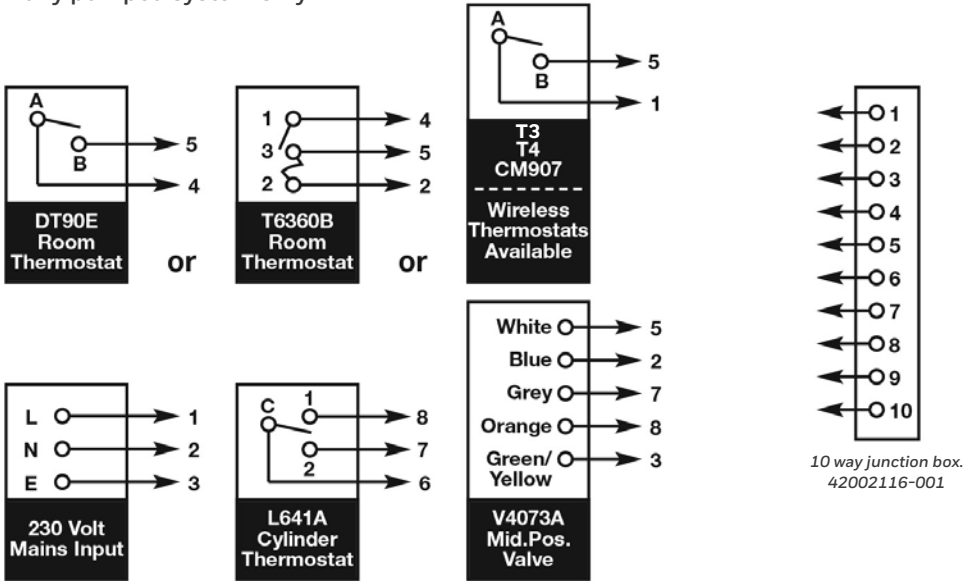


Receiver module
R6H911RF



Y Plan

Fully pumped system only

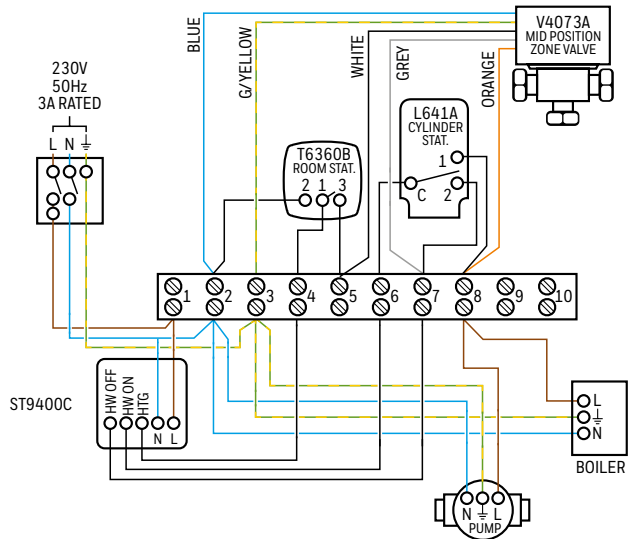
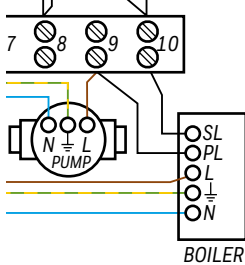


Wired

Note:

1. It is recommended that either the 10 way junction box or Sundial wiring centre should be used to ensure first time, fault free wiring.
2. For wiring other room thermostats see above.

Pump overrun



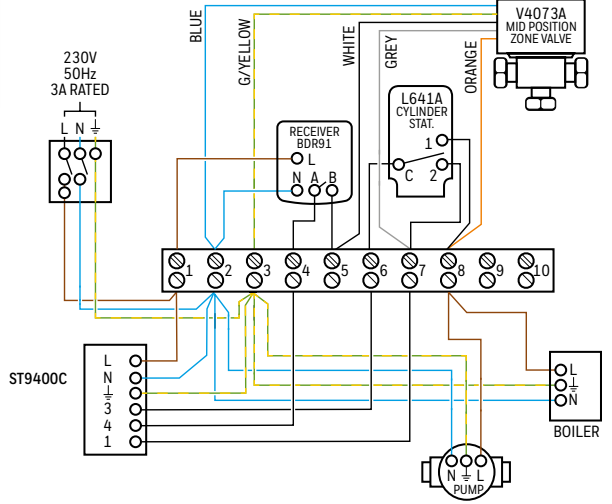
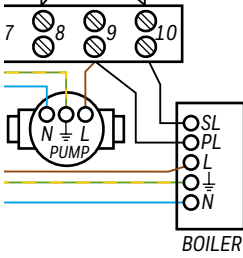
Y Plan

Wireless room thermostat

Note:

1. It is recommended that either the 10 way junction box or Sundial wiring centre should be used to ensure first time, fault free wiring.

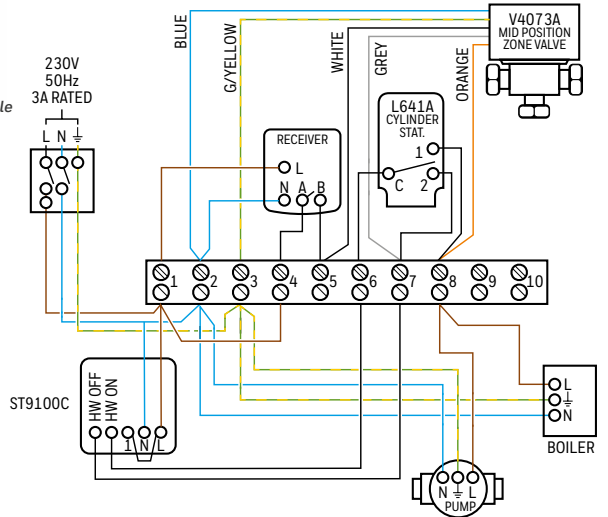
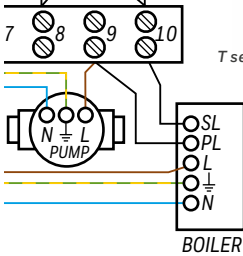
Pump overrun



Y Plan

Wireless programmable room thermostat

Pump overrun

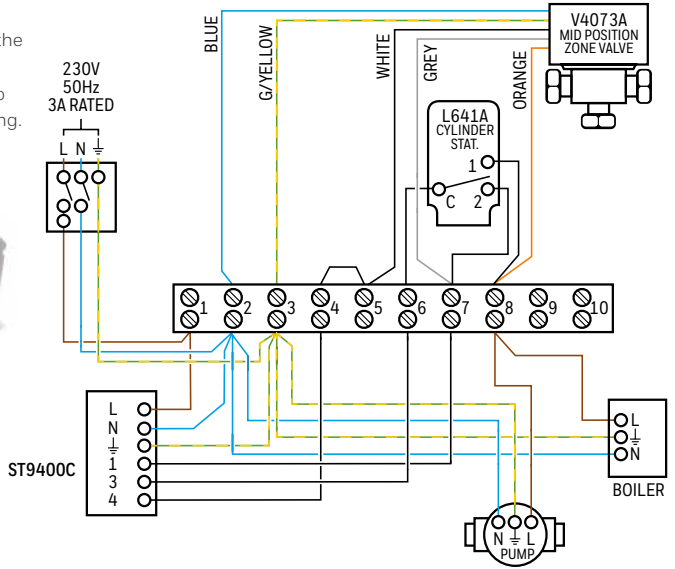
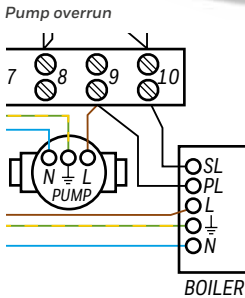


Y Plan

Wireless enabled room thermostat (Sundial RF² pack 2)

Note:

1. It is recommended that either the 10 way junction box or Sundial wiring centre should be used to ensure first time, fault free wiring.

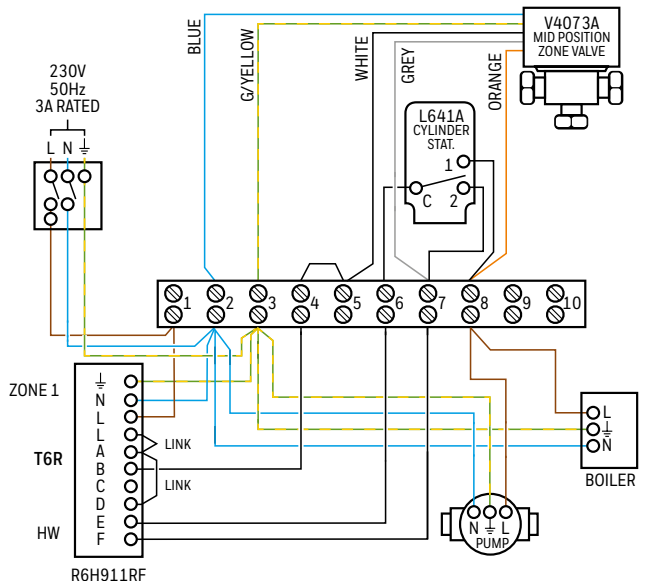
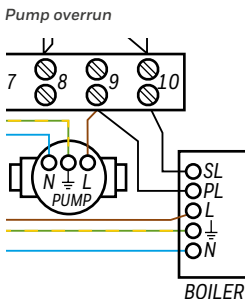
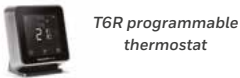


Y Plan

T6R series smart thermostat with timed hot water

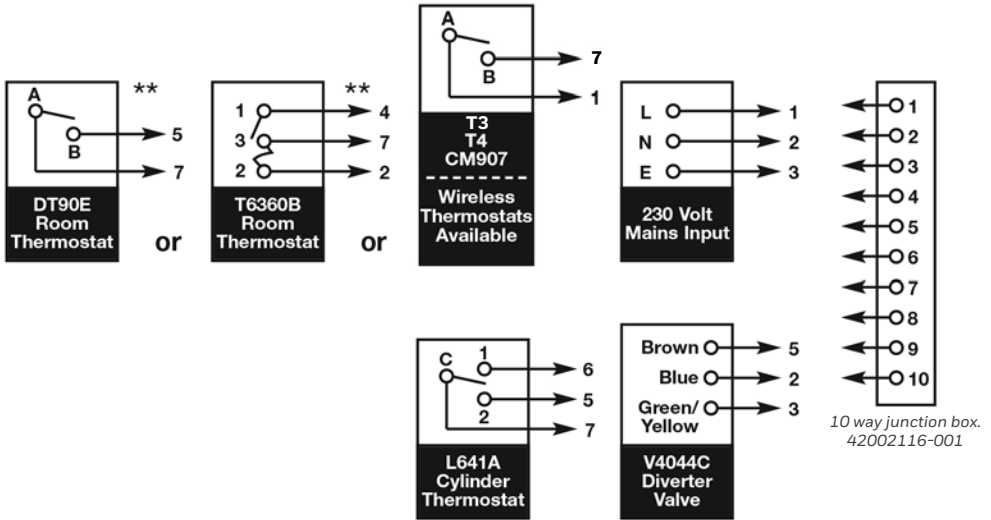
Note:

1. It is recommended that either the 10 way junction box or Sundial wiring centre should be used to ensure first time, fault free wiring.



W Plan

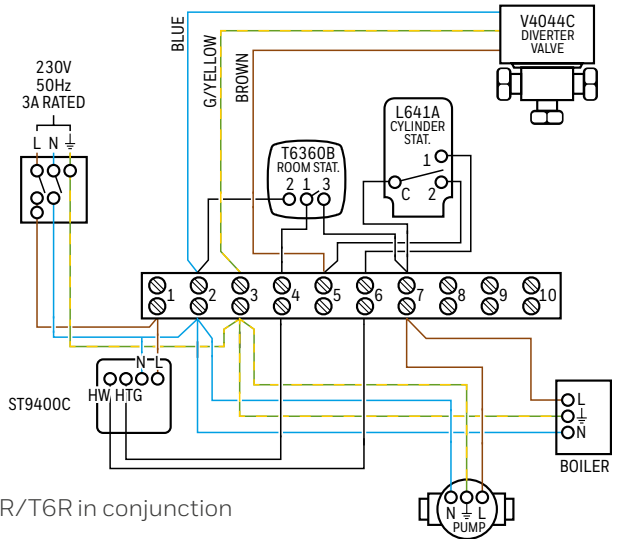
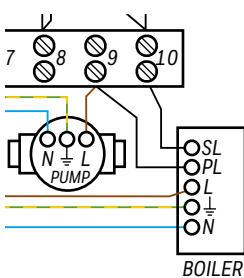
Fully pumped system only (hot water priority)



Note:

- It is recommended that the 10 way junction box should be used to ensure first time, fault free wiring.

Pump overrun



You can also use T3/T3R/T4/T4R/T6R in conjunction with W Plan installations.

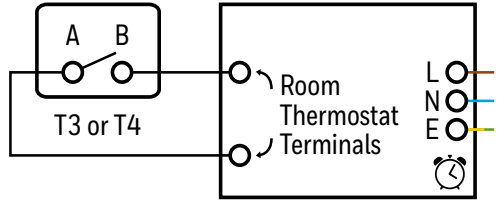
Combination Boiler Wiring

Hard wired (with or without timer)

Any Voltage



With internal timer, select continuous

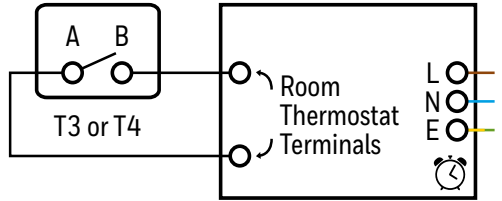


COMBINATION BOILER

Single Zone

Hard wired (with internal timer)

Any Voltage

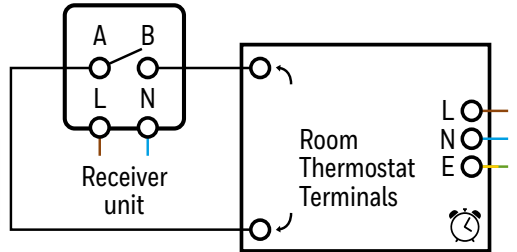


COMBINATION BOILER

Single Zone

Wireless (with or without internal timer)

Any Voltage



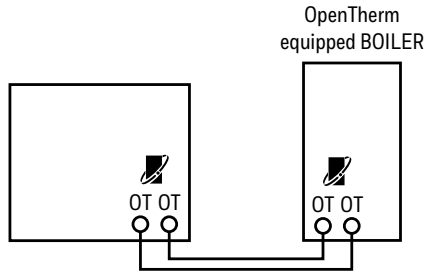
COMBINATION BOILER

OpenTherm

Wiring



OR



Our range of Honeywell Home OpenTherm programmable thermostats can be considered when specifying OpenTherm boilers.

Product	OpenTherm setting information
T3M - Wired OpenTherm heating control.	Optional WC curve setting and internal reference - no support for DHW setpoint.
T4M - Wired OpenTherm heating control.	Optional WC curve setting and internal reference - no support for DHW setpoint.
T4R - Wireless OpenTherm heating control.	No support for DHW setpoint.
T6R - Wall mount OpenTherm heating control.	Support for DHW setpoint and overnight preheat disable for combi boiler applications.
T6R - Table mount OpenTherm heating control.	Support for DHW setpoint and overnight preheat disable for combi boiler applications.

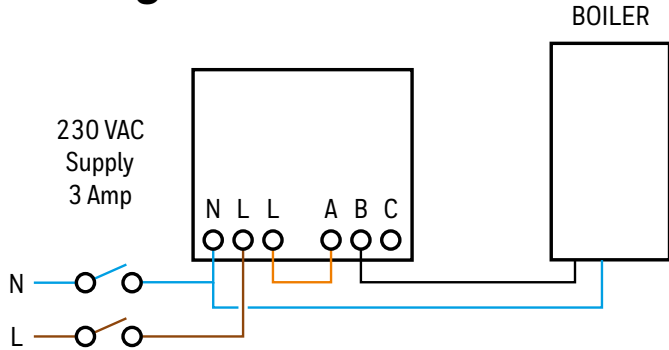
For OpenTherm compatibility please refer to the boiler manufacturer.

**DO NOT CONNECT TO MAINS, SL OR VOLT FREE TERMINALS -
POWER COMES FROM OPENTHERM CONNECTIONS ON BOILER**

Receiver Box Wiring

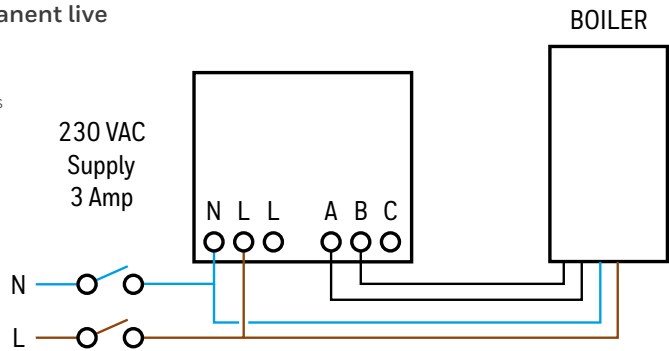
Wired to a basic boiler

Wiring for a basic boiler, not requiring pump overrun. The relay powers the boiler live input.



Wired to a boiler permanent live

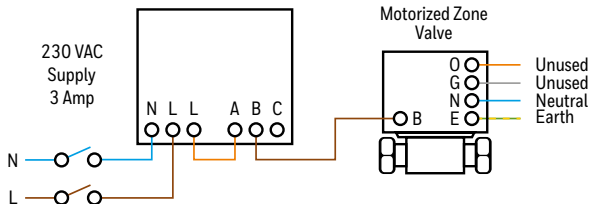
For use with a boiler that requires a permanent live (this is typical combi boiler wiring). Please check manufacturer's instructions. This can be used for boilers with low voltage or 230 VAC inputs.



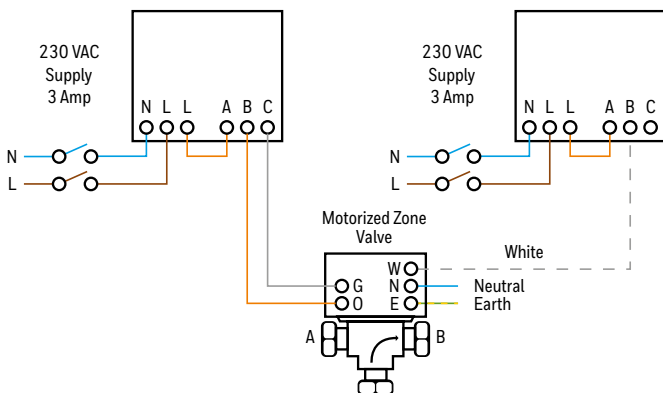
evohome BDR91 Wiring

The BDR91 is for use with the evohome system. It can be wired to control a number of different central heating components, including; boilers, heat pumps and zone valves. The diagrams above show how they must be wired.

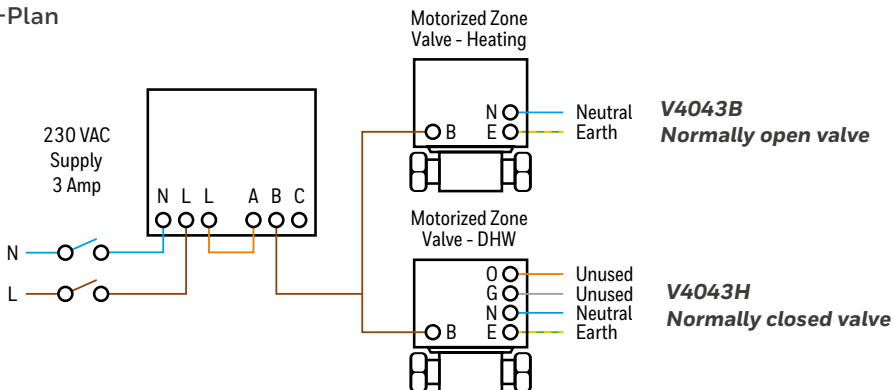
Two-port zone valve control



Mid position valve control



X-Plan



Programmer Wiring



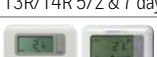


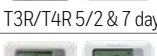

Connect onto terminal
block numbers



Programmer Interchange	HW OFF	HW ON	CH ON	E	N	L
Honeywell Home ST9400, ST9440, ST9500	1	3	4	E	N	L
Honeywell Home ST6450, ST6400, ST6300	1	3	4	E	N	L
Honeywell Home ST6200		3	4	E	N	L
Honeywell Home ST699B, ST799A, (Link L5-8)	7	6	3	E	N	L
Honeywell Home ST7100	7	6	5	E	N	L
Sundial RF ² Pack 2	1	3	4	E	N	L
Sundial RF ² Pack 3	1	3	4	E	N	L
Sundial RF ² Pack 5		Zone 1	Zone 2	E	N	L

CM900 & CM700 Replacement guide

The CM range of programmable thermostats is being superseded by newer, more technically advanced products – here's a handy replacement guide

CM model	Programming and Wiring	Replace with	Reason	Replace with	Reason
 CM701	One day wired version	 T3/T4 1, 5/2 & 7 day wired model	Automatic energy efficiency	 T6R 1, 5/2 & 7 day	Automatic energy efficiency PLUS smart connected control
 CM707	Seven day wired version	 T3/T4 1, 5/2 & 7 day wired model		 T6R 1, 5/2 & 7 day	
 CM721	One day wireless version	 T3R/T4R 5/2 & 7 day wireless model		 T6R 1, 5/2 & 7 day	
 CM727	Seven day wireless version	 T3R/T4R 5/2 & 7 day wireless model		 T6R 5/2 & 7 day	
 CM901	One day wired version	 T3/T4 1, 5/2 & 7 day wired model		 T6R 1, 5/2 & 7 day	
 CM907	Seven day wireless version	 T3/T4 1, 5/2 & 7 day wired model		 T6R 1, 5/2 & 7 day	
 CM921	One day wireless version	 T3R/T4R 5/2 & 7 day wireless model		 T6R 1, 5/2 & 7 day	
 CM927	Seven day wireless version	 T3R/T4R 5/2 & 7 day wireless model		 T6R 1, 5/2 & 7 day	
Models best for	OpenTherm Boiler control	 T3M/T4R/T4M 5/2 & 7 day wired model		 T6R 1, 5/2 & 7 day	

Valve Wiring

Replacement wiring guide for the old V4073A1005 to all new V4073A models

The V4073A1005 valve had 6 wires and a relay plugged into one end. When installing the newer V4073A models, the wiring will be the same except there is no brown wire.

For single and twin channel programmers

Omit brown wire and reverse C & 1 on the cylinder thermostat.

Programmers capable of heating only:

Run cable from HW OFF to grey wire connected to valve.

Programmers NOT capable of heating only:

The grey wire connected to the valve is not required.

Exceptions:

Randall 4033 programmer

Remove wire that connects to cylinder thermostat 1 at junction box end and reconnect to **orange** wire of valve.

Disconnect wire at terminal 1 on programmer, isolate and make safe. Add link in programmer back plate between terminals 1 and 6.

NB. If the Randall 4033 has been used as a junction box, any wires going into terminal 1 should be removed and reconnected into a spare terminal connector (not supplied by Honeywell Home).

Sangamo 410 form 1 programmer

Follow instructions for Randall 4033, except on programmer base plate, disconnect wire on terminal 3 and add link between 3 and 6 on baseplate.

MOTORIZED VALVE INTERCHANGEABILITY GUIDE

Model	E	N	S/L	HW ON	CH ON	HW OFF
Honeywell Home V4073A	GY	BL	OR		WH	GR
ACL 679H340	GY	BL	OR		WH	GR
ACL 679B340	GY	BL	OR		WH	GR
Danfoss/Randall DVM-3M	GY	BL	OR		WH	GR
Danfoss/Randall HSA3	GY	BL	OR		WH	GR
Drayton Flowshare 2	GY	BL	OR		WH	GR
EPH B322PF	GY	BL	OR		WH	GR
ESI ESZV223P	GY	BL	OR		WH	GR
Grasslin/Tower MP 22C	GY	BL	OR		WH	GR
Landis & Gyr MAV322	GY	BL	OR		WH	GR
Pegler/Sunvic SD2701	GY	BL	OR		WH	GR
Pegler/Sunvic SDV2211	GY	BL	OR		WH	GR
Pegler/Sunvic SD1701	GY	BL	OR		BR	GR
Potterton/Myson PMV3	GY	BL	OR		BR	GR
Potterton/Myson MSV322		BL	OR		WH	GR
Sopac ZV20-EB	GY	BL	RE		WH	GR
Switchmaster MIDI	GY	BL	RE	OR	YE	WH
Danfoss Heatshare	GY	BL	RE	OR	YE	WH

Add link

Model	E	N	S/L	Motor	PL
Honeywell Home V4043H	GY	BL	OR	BR	GR
ACL 679H308-30L1	GY	BL	OR	BR	GR
ACL 679B308-30L1	GY	BL	BK	BR	WH
Danfoss/Randall DVM-2C	GY	BL	OR	BR	GR
Danfoss/Randall HP2A		BL	OR	BR	GR
Drayton	GY	BL	OR	BR	GR
EPH V222P	GY	BL	OR	BR	GR
ESI ESZV222L	GY	BL	OR	BR	GR
Landis & Gyr ZAV222	GY	BL	OR	BR	GR
Pegler/Sunvic SZV 1212		BL	OR	BR	GR
Potterton/Myson PMV43	GY	BL	OR	BR	GR
Randall HPA2	GY	BL	OR	BR	GR
Sopac ZV20-2-EB	GY	BL	RE	WH	GR
Switchmaster Auto Z	GY	BL	OR	BR	GR
Tower/Grasslin MV2-22C	GY	BL	OR	BR	GR

Sunvic V*203

GY BL OR YE

(White wire - make electrically safe)

Connect grey wire on V4043H to permanent live.

GY = Green/Yellow

BK = Black

BR = Brown

OR = Orange

GR = Grey

YE = Yellow

BL = Blue

RE = Red

WH = White

Frost Protection



T4360 frost thermostat and L641B pipe thermostat

To reduce the risk of frozen pipework during severe cold weather, frost protection can be installed to protect either the whole central heating system or the boiler and localised pipework. These controls are designed to override the programmer and room thermostat controls whether wired, wireless or wireless enabled.

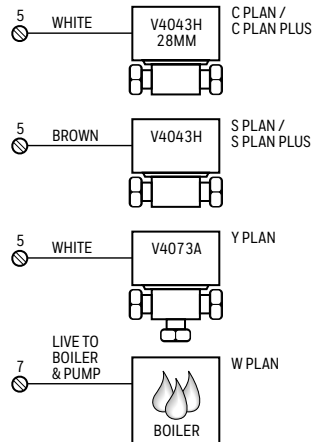
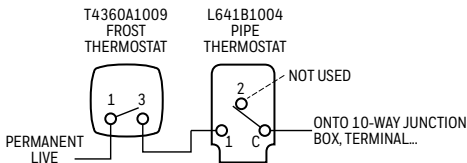
If a frost thermostat only is to be installed to protect the whole central heating system, it must be sited where a rise and fall in heated air temperature can be detected, i.e. in a room with a radiator, and set to 12-16°C. This function is built-in to programmable thermostats and RF² packs.

If the frost thermostat is installed outside the heated area, i.e. in a boiler room, garage or attic space, it is strongly recommended that a pipe thermostat be used as well to ensure that overheating of the property does not occur. The frost thermostat should be set to 5°C. The pipe thermostat will sense a rise in water temperature in the pipework and then switch the system off. It should be sited on the boiler return, set at 25°C and wired as below.

Mains voltage frost kit: K42008628-001

T4360 frost thermostat and L641B low-limit pipe thermostat

(Recommend 1mm² 240Vac rated cable)



When a frost thermostat is installed on a central heating system, the fused spur should only be switched off for servicing and maintenance. If the heating system is to be switched off for any other reason, e.g. holiday, then switching must only be carried out at the programmer or timeswitch, otherwise the frost protection is disabled.

Fault Finding

Y Plan

The table overleaf gives guidance on electrical checks for installed wired **Y plans**, to help commission and pin-point the source of any electrical problems. First **check your wiring**. Only start suspecting faulty components after you are satisfied all wiring is correct.

The following notes will help to identify faulty components.

Cylinder stat

Make sure you have wired to the correct terminals.

Terminal C (common) is the left hand terminal, terminal 1 is the middle terminal. Terminal 2 is the right hand terminal.

Suspect the cylinder thermostat is faulty only if terminal 1 does not become live when calling for hot water, or terminal 2 does not become live when satisfied. (Make sure that terminal C is live in both cases). While checking, disconnect terminals 1 and 2 to prevent false readings due to backfeed.

Room stat

- 1) Remove wire from terminal 3.
- 2) Live to terminal 1.
- 3) Turn stat to call, if no live on 3 then faulty.

Suspect the room stat is faulty only if terminal 3 is not live when calling for heat. (Make sure terminal 1 is live). While checking, disconnect wiring from terminal 3 to prevent false readings due to backfeed.

Mid-position valve

Suspect the V4073A valve is faulty only if the valve does not operate as specified in the following checks (these should be done in order 1, 2, 3, 4, 5 and 6).

Valve open for heating only

1. Switch off mains supply. Disconnect **grey** and **white** wires from appropriate junction box terminals. Reconnect both Grey and White wires to permanent live terminal in junction box.
2. Switch on mains supply. Valve motor should now move to fully open heating port A. The motor should stop automatically when port A is open, and stay in this position as long as there is power to **white** and **grey** wires. When port A is fully open, the **orange** wire becomes live, to start boiler and pump.

Double check by feeling that port A outlet is getting progressively warmer.

Valve open for DHW only

3. Switch off mains supply. The valve should now automatically return to open DHW port B and close heating port A.
4. Isolate **grey** and **white** wires and make safe. Remove cylinder stat wire from terminal 6 in junction box and connect to permanent live. Switch on fused spur, cylinder stat must be set to call for heat, boiler and pump should start.

Valve open for both DHW and heating

5. Switch off mains supply. Replace cylinder stat wire to terminal 6. Isolate and make safe **grey** wire and connect **white** wire to permanent live. Switch on mains supply, motor should now move to mid-position and stop automatically. Cylinder thermostat must be set to call for heat. Both ports A & B are now open for hot water and heating. Boiler and pump should start.

Double check by feeling that pipe outlets from ports A & B become progressively warmer.

6. Switch off mains supply, reconnect **white** and **grey** wires to junction box terminals. If this check completes satisfactorily, the problem is not the valve, but elsewhere in the circuit.

Programmer

Suspect the programmer only:

- If you have made sure that any links required are in place
- If you have made sure that the programmer has power – to the correct terminal
- If you have made sure that the programmer timing is set up correctly (see user guide)
- If live does not appear at heating ON terminal when heating only is selected on continuous or timed,
- If live does not appear at hot water ON terminal when hot water only is selected on continuous or timed,
- If live does not appear on hot water OFF terminal with hot water OFF on programmer.

Y Plan

Programmer switch position	Heating only selected	Hot water only selected	Hot water and heating selected
Programmer	Live on both 'CH ON' & 'HW OFF' terminals.	Live on 'HW ON' terminal.	Live on both 'CH ON' & 'HW ON' terminals.
T6360B room thermostat	Set to call for heat. Live on terminals 1 & 3.	No live on any terminal.	Set to call for heat. Live on terminals 1 & 3.
L641A cylinder thermostat	Nominal 90 volts. Live on terminals 1 & 2 (Note terminal 1 only becomes 240 volt live after V4073A valve opens and boiler fires).	Set to call for hot water. Live on terminals C & 1.	Set to call for hot water. Live on terminals C & 1.
V4073A 3 port mid-position valve	Live on grey, white and orange wires. Valve opens to port A for central heating (CH).	Live on orange wire only. Valve not energised. Port B open for domestic hot water (DHW).	Live on white wire and orange wire. Valve in mid position for CH and DHW.
Boiler and pump	Boiler and pump fired via live feed from orange wire.	Boiler and pump fired via live feed from terminal 1 on cylinder stat.	Boiler and pump fired via live feed from terminal 1 on cylinder stat and orange wire.

Notes:

- Any checks to be undertaken on electrical wiring **must** only be made by a suitably qualified electrician or other competent person.
- Low A.C. voltage may appear on specified wire or terminals due to back feed from V4073A valve. If in doubt, disconnect **grey** or **white** wire as appropriate, or check with meter for full 240V.
- **Blue** wire on valve **must** be connected to neutral.
- Terminal 2 on the T6360B room thermostat **must always** be connected to neutral.
- Ensure that any links required in programmer are in place.
- Earth connection (**green/yellow**) **must** be made on valve.
- Earth connection not needed on room stat or cylinder stat.

Fault Finding

S Plan and S Plan Plus Plans

The table overleaf gives guidance on electrical checks for installed wired **S Plan** and **wired S Plan Plus**, to help commission and pin-point the source of any electrical problems. First **check your wiring**. Only start suspecting faulty components after you are satisfied all wiring is correct. The following notes will help to identify faulty components.

The following notes will help to identify faulty components.

Cylinder stat

Make sure you have wired to the correct terminals.

Terminal C (common) is the **left hand** terminal. Terminal 1 is the **middle** terminal. Terminal 2 is the **right hand** terminal.

Suspect the cylinder thermostat is faulty only if terminal C **not** live when calling for hot water.

Room stat

- 1) Remove wire from terminal 3.
- 2) Live to terminal 1.
- 3) Turn stat to call, if no live on 3 then faulty.

Suspect the room stat is faulty only if terminal 3 is not live when calling for heat. Make sure terminal 1 is live - while checking, disconnect wiring from terminal 3 to prevent false readings due to backfeed.

Zone valves

Suspect a motorised valve is faulty only:

1. If the motor fails to rotate with live applied to the **brown** wire and neutral to the **blue** wire. Motor can be viewed with valve cover removed.

Note that the motor stops automatically when the valve is fully open and stays in this condition as long as live is applied to the **brown** wire.

The valve automatically closes under spring return when live is removed from the **brown** wire.

The **orange** wire only becomes live after the valve has fully opened (make sure the **grey** wire is live).

3. If the boiler and pump continues to run when the cylinder stat and room stat is satisfied and the clock is in OFF position.

Programmer

Suspect the programmer only:

- If you have made sure that any links required are in place.
- If you have made sure that the programmer has power – to the correct terminal.
- If you have made sure that the programmer timing is set up correctly (see individual programmer user guide as appropriate).
- If live does not appear at heating ON terminal when heating is selected on continuous or timed.
- If live does not appear at hot water ON terminal when hot water only is selected on continuous or timed.

S Plan and S Plan Plus

Programmer switch position	Heating only selected	Hot water only selected	Hot water and heating selected
Programmer	Live on both 'CH ON' terminal.	Live on 'HW ON' terminal.	Live on both 'HW ON' & 'CH ON' terminals.
T6360B room thermostat	Set to call for heat. Live on terminals 1 & 3.	No live on any terminal.	Set to call for heat. Live on terminals 1 & 3.
L641A cylinder thermostat	No live on any terminal	Set to call for hot water. Live on terminals C & 1.	Set to call for hot water. Live on terminals C & 1.
V4043H heating zone valve	Live on brown, grey and orange wires.	Live on grey and orange wires.	Live on brown, grey and orange wires.
V4043H hot water zone valve	Live on grey and orange wires	Live on Brown, Grey and Orange wires.	Live on brown, grey and orange wires.
Boiler and pump	Boiler and pump fired via live feed from orange wire.	Boiler and pump fired via live feed from orange wire.	Boiler and pump fired via live feed from orange wire.

Notes:

- Any checks to be undertaken on electrical wiring must only be made by a suitably qualified electrician or other competent person.
- Grey wire on both heating and hot water zone valves must be connected to permanent live.
- Blue wire on both heating and hot water zone valves must be connected to neutral.
- Terminal 2 on the T6360B room thermostat must always be connected to neutral.
- Ensure that any links required in programmer are in place.
- Earth connection (green/yellow) must be made on valve.
- With 28mm or 1 inch V4043H valves the white wire is not used and must be made electrically safe.

Fault Finding

W Plan

The table opposite gives guidance on a quick electrical check for installed wired **W Plans** to help in commissioning and to pin-point the source of any electrical problems. Remember the **Golden Rule** if you have a problem. First of all **check your wiring**. Only start suspecting faulty components after you are satisfied all wiring is correct.

The following notes will help to identify faulty components.

Cylinder stat

First of all, make sure you have wired to the correct terminals.

Terminal C (common) is the **left hand** terminal. Terminal 1 is the **middle** terminal. Terminal 2 is the **right hand** terminal.

Suspect the cylinder thermostat is faulty only if terminal 1 is **not** live when calling for hot water, or terminal 2 is **not** live when satisfied. (Make sure that terminal C is live in both cases). While checking, disconnect terminals 1 and 2 to prevent false readings due to backfeed.

Room stat

- 1) Remove wire from terminal 3.
- 2) Live to terminal 1.
- 3) Turn stat to call, if no live on 3 then faulty.

Suspect the room stat is faulty only if terminal 3 is not live when calling for heat. (Make sure terminal 1 is live). While checking, disconnect wiring from terminal 3 to prevent false readings due to backfeed.

Diverter valve V4044C

Suspect the V4044C valve is faulty only if the valve does not operate as specified in the following checks (these should be done in order 1, 2, 3 and 4).

Valve open for heating only

1. Switch off mains supply. Disconnect brown wire from appropriate terminal and connect to permanent live terminal in junction box.
2. Switch on mains supply. Valve motor should now rotate to fully open heating port A.

Valve opens for DHW only

3. Switch off mains supply. The valve should automatically spring return to open DHW port B and close port A.
4. Reconnect brown wire to terminal 5.

Programmer

Suspect the programmer only:

- If you have made sure that any links required are in place.
- If you have made sure that the programmer has power – to the correct terminal.
- If you have made sure that the programmer timing is set up correctly (see individual programmer user guide as appropriate).
- If live does not appear at heating ON terminal when heating is selected on continuous or timed.
- If live does not appear at hot water ON terminal when hot water only is selected on continuous or timed.

W Plan

Programmer switch position	Hot water only selected	Hot water and heating selected
Programmer	Live on 'HW ON' terminal.	Live on both 'CH ON' & 'HW ON' terminals.
T6360B room thermostat	No live on any terminal.	Set to call for heat. Live on terminals 1 & 3.
L641A cylinder thermostat	Set to call for hot water. Live on terminals C & 1.	Set to call for hot water. Live on terminals C & 1.
V4044C diverter valve	Valve not energised Port B open for domestic hot water.	Live on brown wire only. When D.H.W. satisfied.
Boiler and pump	Boiler and pump fired via live feed from terminal C on cylinder stat.	Boiler and pump fired via live feed from terminal C on cylinder stat and 3 on room stat.

Notes:

- Any checks to be undertaken on electrical wiring must only be made by a suitably qualified electrician or other competent person.
- Blue wire on diverter valve must be connected to neutral.
- Terminal 2 on the T6360B room thermostat must always be connected to neutral.
- Ensure that any links required in programmer are in place.
- Earth connection (green/yellow) must be made on valve.

Re-binding of Wireless Products

In the event your wireless thermostat loses communications to its receiver box please follow the instructions below to re-establish communications.



Please ensure you stand at least 1m away from the receiver box when re-binding.

T6R



1. Press reset button on the receiver box for 3 seconds using a paper clip
2. Enter binding mode by pressing the flame button on receiver box for 3 seconds
3. The LED will flash amber
4. On the thermostat enter the ADVANCED MENU by pressing the menu button for 5 seconds
5. Navigate to the binding screen
6. Select clear binding and confirm
7. Select bind and press tick, the binding signal will be sent
8. If successful, SUCCESS will show on thermostat and receiver box will show a green LED on the aerial symbol.
9. If unsuccessful, FAILED will show on thermostat

T4R



1. Press reset button on the receiver box for 3 seconds using a paper clip
2. Enter binding mode by pressing the flame button on receiver box for 3 seconds
3. The LED will flash amber
4. On the thermostat press MENU button and – button for 3 seconds to enter binding menu
5. 14A-0 should appear (if 14A-1 appears please follow step 10)
6. Press + to change parameter from 14A-0 to 14A-1
7. Press tick if successful a small 1 will appear on the top left of the screen
8. Press tick repeatedly until save appears
9. If successful, the receiver box will show a green LED on the aerial symbol
10. If 14A-1 appears (need to clear binding below)
 - Press tick, then tick again to show 14C-0
 - Press + to change parameter to 14C-1
 - Press tick, then tick again to save and return to main menu
 - Repeat steps 4-7)

T3R



EIM








1. Press reset button on the receiver box for 3 seconds using a paper clip
2. Enter binding mode by pressing the flame button on receiver box for 3 seconds
3. The LED will flash amber
4. On the thermostat press MENU button and – button for 3 seconds to enter binding menu
5. Press tick, 14A-0 should appear (if 14A-1 appears please follow step 11)
6. Press + to change parameter from 14A-0 to 14A-1
7. Press tick, if successful a small 1 on the left of the screen should appear
8. Press tick repeatedly until save appears
9. If successful, the receiver box will show a green LED
10. Press back button twice to return to the main menu
11. If 14A-1 appears (need to clear binding below)
 - Press tick, then tick again to show 14C-0
 - Press + to change parameter to 14C-1
 - Press tick, then tick again to save and return to main menu
 - Repeat steps 4-10)






BDR91



1. Press and hold the receiver box button for 15 seconds (this deletes any previous binding), Red light will flash on for 0.1 seconds and be off for 0.9 seconds.
2. Press and hold the button again for 5 seconds, the red light should blink slowly.
3. On the thermostat press MENU button and – button for 3 seconds to enter binding menu
4. Press tick, 14A-0 should appear (if 14A-1 appears please follow step 11)
5. Press + to change parameter from 14A-0 to 14A-1
6. Press tick, if successful a small 1 on the left of the screen should appear
7. Press tick repeatedly until save appears
8. If successful, the receiver box will show a green LED
9. Press back button twice to return to the main menu
10. If 14A-1 appears (need to clear binding below)
 - Press tick, then tick again to show 14C-0
 - Press + to change parameter to 14C-1
 - Press tick, then tick again to save and return to main menu
 - Repeat steps 4-10)

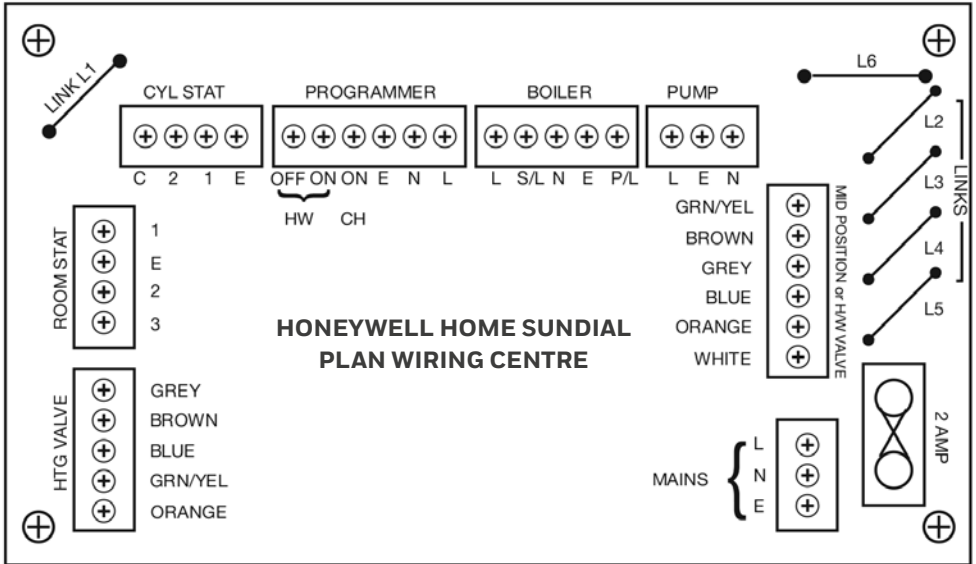
Follow the instructions in the table below to re-bind your thermostat to the BDR91 receiver box:

CMT900 & CMT700 range of wireless programmable room thermostats	DT92E wireless digital room thermostat
 <p>Move the room thermostat slider to the OFF (CMT900) position or press the off button (CMT700) and press the   and  buttons together along with the  button. The unit will display 'InST' and 'CONTROL BINDING'.</p>	 <p>Press and hold the power button for 2 seconds to put the unit into standby.</p>
<p>Press the green  button to send the binding signal out to the relay box. The red LED on the relay is switched off to confirm successful binding operation. If the red LED still flashes push the button again until binding is successful.</p>	<p>Press the up and down arrows together for 3 seconds – it should say 'InST'.</p>
<p>Return the slider to AUTO (CMT900) or press the AUTO button (CMT700).</p>	<p>Press the down arrow – it should say 'CONT'.</p>
	<p>Press the up arrow three times – it should say 'CLR'.</p>
	<p>Follow appropriate cure above.</p>
	<p>Press the power button once to clear any previous binding data.</p>
	<p>Press the up arrow – it should say 'CONT'.</p>
	<p>Press the power button to send the binding signal to the wireless relay.</p>
	<p>The screen will return to normal and the red light will disappear from the relay.</p>
	<p>Press the power button for 5 seconds and the screen will return to normal.</p>

Y6630D wireless room thermostat	Y87RF wireless room thermostat
 <p>Note The Y6630D uses the HC60 relay unit, but clearing the memory and putting the unit into listening mode is the same as the BDR91.</p> <p>Take the front cover off of the thermostat.</p>	 <p>Touch and hold on the left touch zone for approximately 10 seconds.</p>
<p>Press the 'send' button (bottom right of the thermostat body).</p>	<p>The screen for binding the boiler relay is now displayed.</p>
<p>The red light on the receiver should disappear if it has been successful.</p>	<p>When the symbol 'bo' is flashing, briefly touch the left touch zone to send the binding signal, at which point the  symbol will flash several times.</p>
<p>The Y6630D thermostat is being phased out and it is recommended that a new digital room thermostat such as the DT90/92 or the Y87RF is fitted in its place.</p>	<p>If binding has been successful the number indicates the signal strength (1 = min to 5 = max).</p>
	<p>If binding fails,   appears on screen. Please try again.</p>
	<p>Press the power button once to clear any previous binding data.</p>
	<p>The red LED on the boiler relay will turn off when binding has been successful.</p>

Wiring Centre

A simple alternative to using this guide and a conventional junction box, is the Honeywell Home Sundial Plan's wiring centre (part number 42005748-001). This provides a clearly marked terminal block for each component in the system with each wire having its own terminal.



COMPONENTS LAYOUT

If using programmer (not basic time clock) cut link 1

FOR FULLY PUMPED SYSTEMS

FOR S PLAN (two zone valves) cut links L2 and L4.

If boiler requires pump overrun cut link L3 also.

If using a 28mm or 1" BSP V4043H the WHITE wire must be isolated and made safe. Do not connect to a terminal.

FOR Y PLAN (mid position valve) cut links L4 and L5.

If boiler requires pump overrun cut link L6 also.

FOR GRAVITY PRIMARY SYSTEMS

FOR C PLAN (one 28mm zone valve) cut links L2 and L3.

If room thermostat is not being used, link terminals 1 and 3 at the ROOM STAT connector block.

For frost protection connect the FROST THERMOSTAT T4360A as follows:

S Plan

Frost thermostat terminal 1 to HW OFF on programmer block. Frost thermostat terminal 3 to WHITE on MID POS/HW VALVE terminal block.

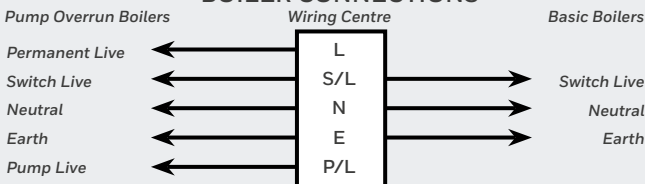
Y Plan

Frost thermostat terminal 1 to GREY and frost thermostat terminal 3 to BROWN on HTG VALVE terminal block.

C Plan

Frost thermostat terminal 1 to GREY and frost thermostat terminal 3 to ORANGE on HTG VALVE terminal block.

BOILER CONNECTIONS



Installer Training Courses

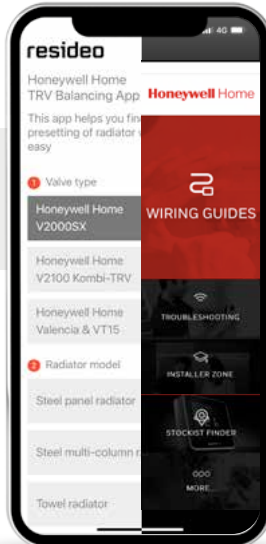


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