



## **VC series motorized valves**

2-port zone valves and 3-port diverter valve

# Why Choose VC Valves?

- The VC4613 actuator was selected for the UK market, based on the most popular V valve product & its similarity in operation and installation
- They are used in closed heating systems in domestic and light commercial applications to control the flow of hot water within the limits of their technical specifications. They are also perfect for use in higher pressure systems such as district heating, heat pumps and light commercial installations
- The unique design consisting of a valve, a cartridge and an actuator, means the valve can achieve bi-directional flow

SPECIFICATIONS	
Medium	Water or water-glycol mixture (max. 50% glycol content), quality to VDI 2035, pH-value: 8 - 9.5
Operating temperature	1 - 95°C, 120°C short duration peak
Ambient temperature	Max. 65°C
Operating pressure	Max. 20 bar
Differential pressure	Max. 4 bar
Actuator voltage	24 V, 50 Hz (blue label) or 230 V, 50 Hz (red label)
Actuator power consumption	6 VA (when valve position changes)
Auxiliary switch rating	1.0 A @ 250 V, 50-60 Hz (minimum 0.05 A @ 24 Vdc)
Runtime	6 seconds on/off actuators, 120 seconds floating or modulating actuators
Actuator protection type	IP40
Storage temperature	-40 - 65°C
Humidity rating	5 - 95% RH (non-condensing)

## The VC4613 Actuator

- Balanced hydronic valves allow greater control of water flow in numerous applications
- Designed for use with heating and cooling systems
- The VC4613 actuator is a power open, power closed valve with potential free end switches included

### WIRING COLOUR GUIDE FOR 3 WAY VALVE

COLOUR	BLACK	BROWN	BLUE	AUX SWITCH ORANGE	AUX SWITCH GREY	AUX SWITCH WHITE
Action	Live open port A	Live open port B	Neutral	Common	Live when port A is open	Live when port B is open



\*The specification of VC Valves will better suit the systems of the future

# Technical Specification of VC Valves

- Medium - water or water - glycol mixture (50% max glycol content) quality to VDI 2035, Ph - value 8-9.5
- Operating temp - 1 to 95°C (120°C short duration peak)
- Ambient temperature - max 65°C
- Operating pressure - max 20 bar
- Differential pressure - max 4 bar
- Actuator voltage - 240 V 5Hz (red label)
- Actuator power consumption - 6VA (when valve position changes)
- Aux switch rating - 1.0A @250V 50-60 Hz
- Runtime - 6 seconds for on/off actuators
- Actuator protection type - IP40
- Storage temperature - -4 - 65°C
- Humidity rating - 5 - 95% RH (non- condensing)

## Features & Benefits of VC Valves

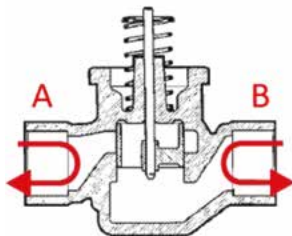
- Two and three port valve bodies
- 'Quick-release' interchangeable powerheads
- Water flow in any direction
- High water differential pressure rating (4 bar)
- High temperature rating 95°C (up to 120° short duration peak)
- Provides electrical output to boiler and/or pump
- Tight valve shut off when closed
- Valves can be manually operated
- No water hammer- 6 second operation
- 230 VAC actuators
- Valve body, cartridge & actuators available as separate spare parts



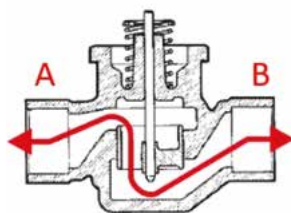
\*No draining down required when fitting new 'quick release' actuators

# Valve Body Types

## 2 PORT VALVE

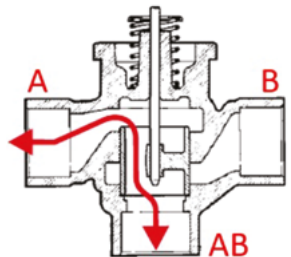
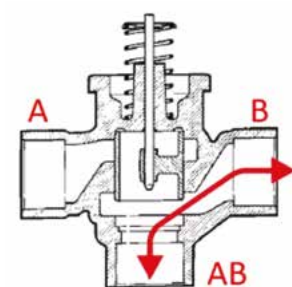


Valve closed



Valve open

## 3 PORT VALVE

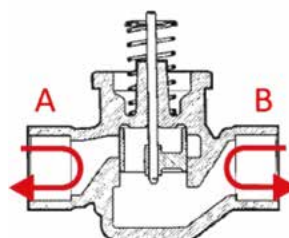


\*BSPP Internal threads in 1/2", 3/4", 1" & 22mm & 28mm compression connections

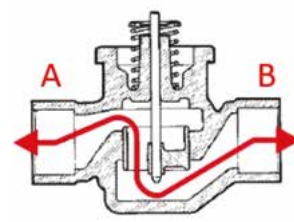
# Cartridges

**2-way valves** are moved by the actuator either to the fully open position (valve stem pushed in – A port is open), or to the fully closed position (valve stem extends by the spring force – A port is closed)

**Part Number: VCZZ1000/U**



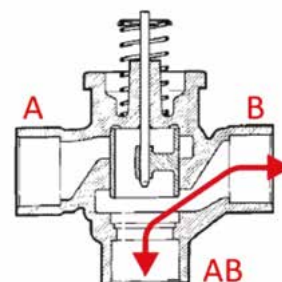
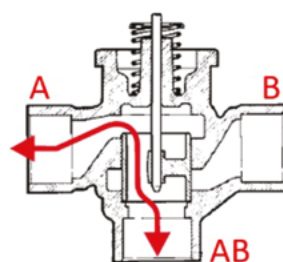
**Valve closed**



**Valve open**

**3-way diverter valves** flow through one inlet and flows out through two outlets (from AB to A or B) in diverting mode. There is no middle position in this operation, port 'A' is either fully opened, or fully closed.

**Part Number: VCZZ6000/U**



The 3 - way diverter valve is a diverter valve & not a mid position valve

## Cartridge Replacement

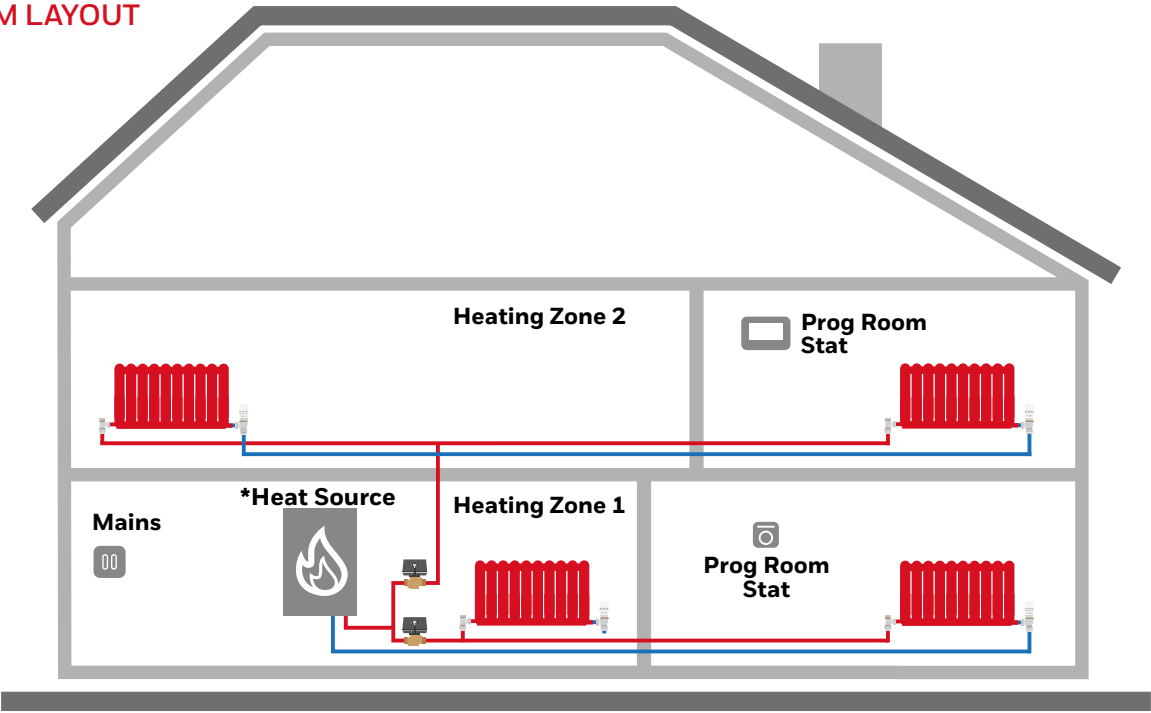
- Cartridges are available as spare parts
- On/off operation
- Cartridge removal tool is included as a spare with each cartridge pack
- VCZZ1000/U – 2 port valve cartridge
- VCZZ6000/U - 3 port valve cartridge



Central heating systems should be cleaned and flushed in accordance with BS7593

# Two Zone Heating

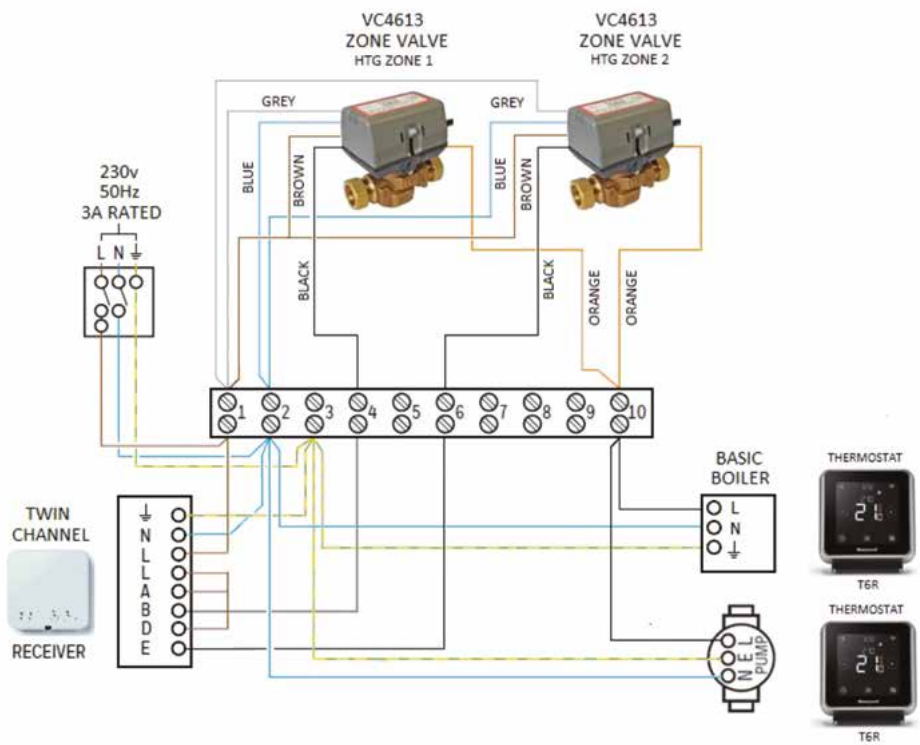
## SYSTEM LAYOUT



\*Heat sources include: boilers, heat pumps, district heating systems, etc.

## WIRING DIAGRAM

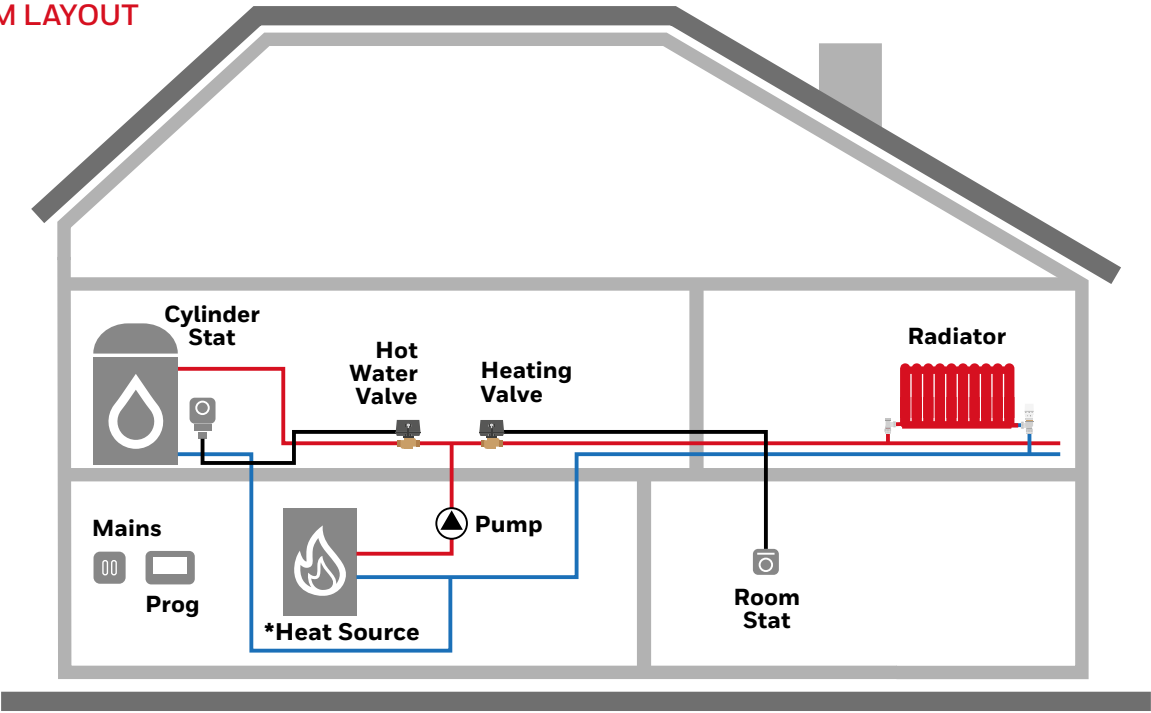
S Plan - 2 heating zones with smart controls T6R range.



\*T3, T3R, T4, T4R all options for this system type, boiler or heat pump applications

# S Plan

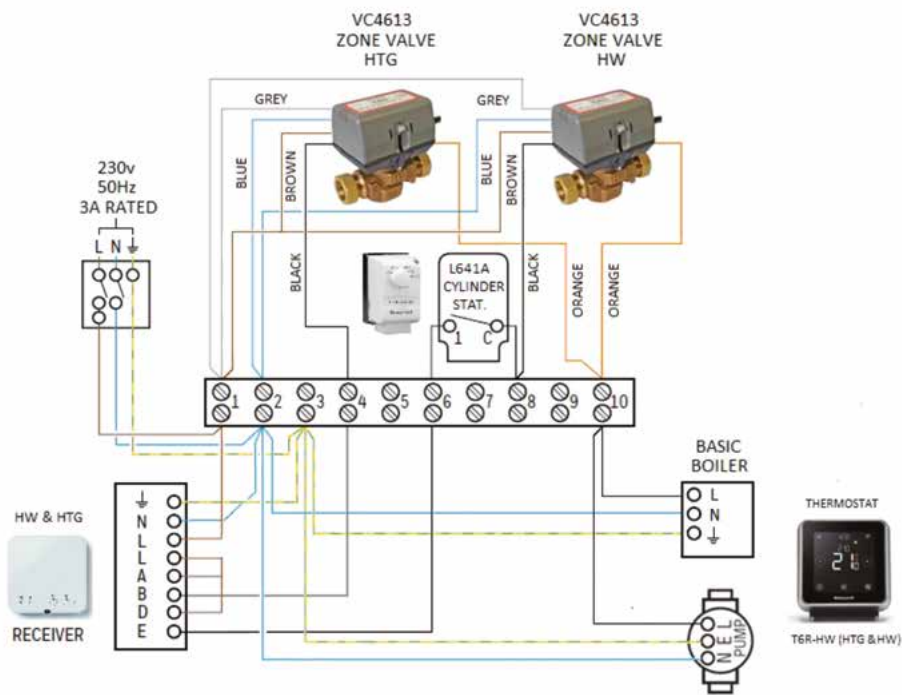
## SYSTEM LAYOUT



\*Heat sources include: boilers, heat pumps, district heating systems, etc.

## WIRING DIAGRAM

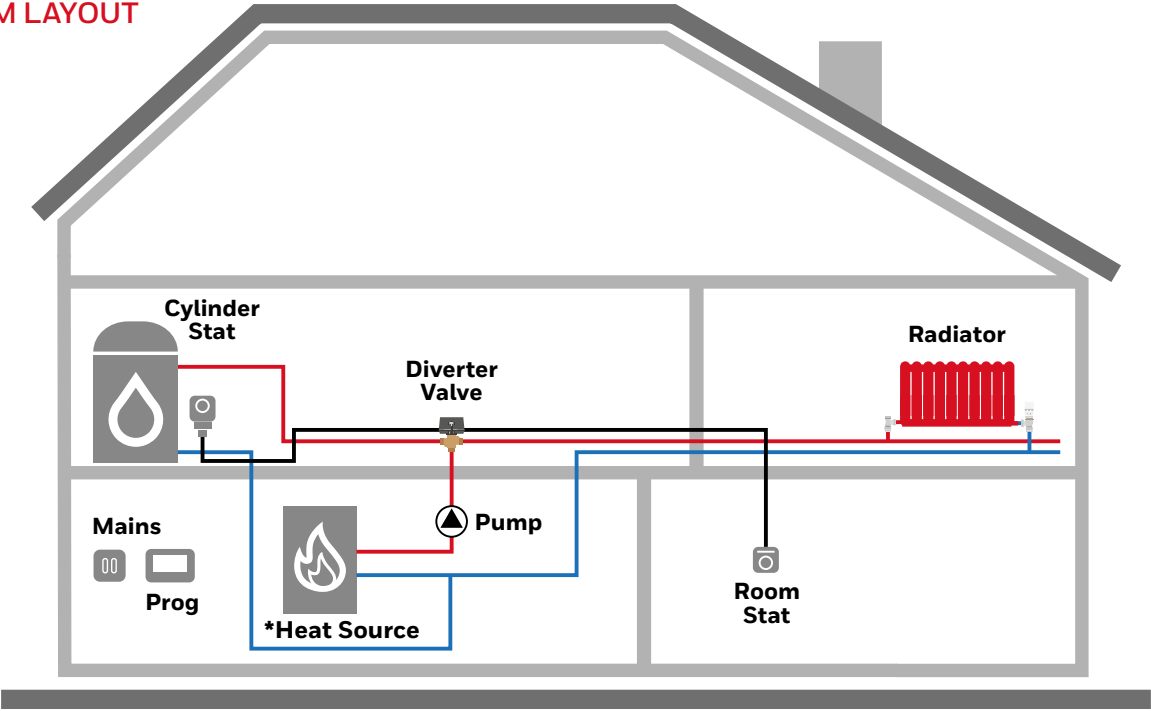
S Plan - VC Valves with smart controls T6R range.



\*Standard controls could be used as an alternative

# W Plan

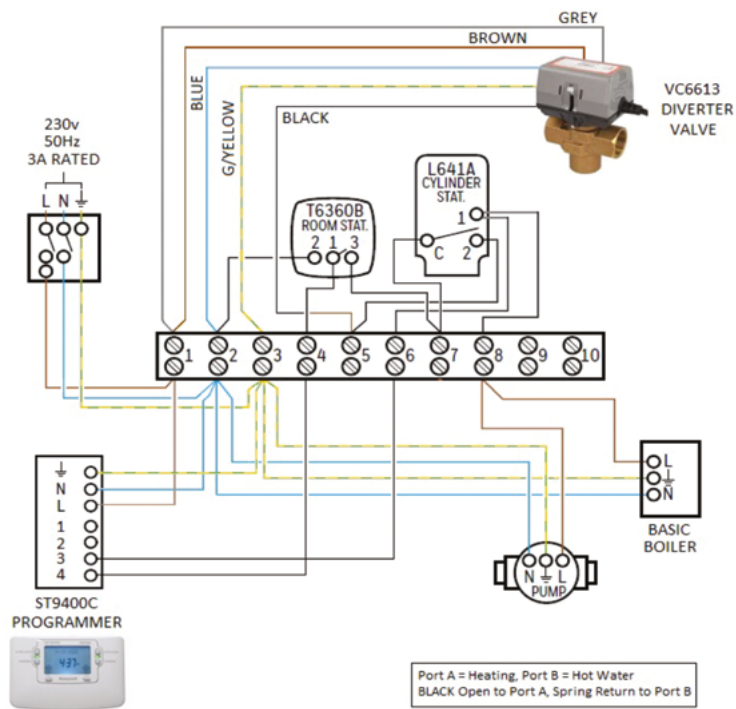
## SYSTEM LAYOUT



\*Heat sources include: boilers, heat pumps, district heating systems, etc.

## WIRING DIAGRAM

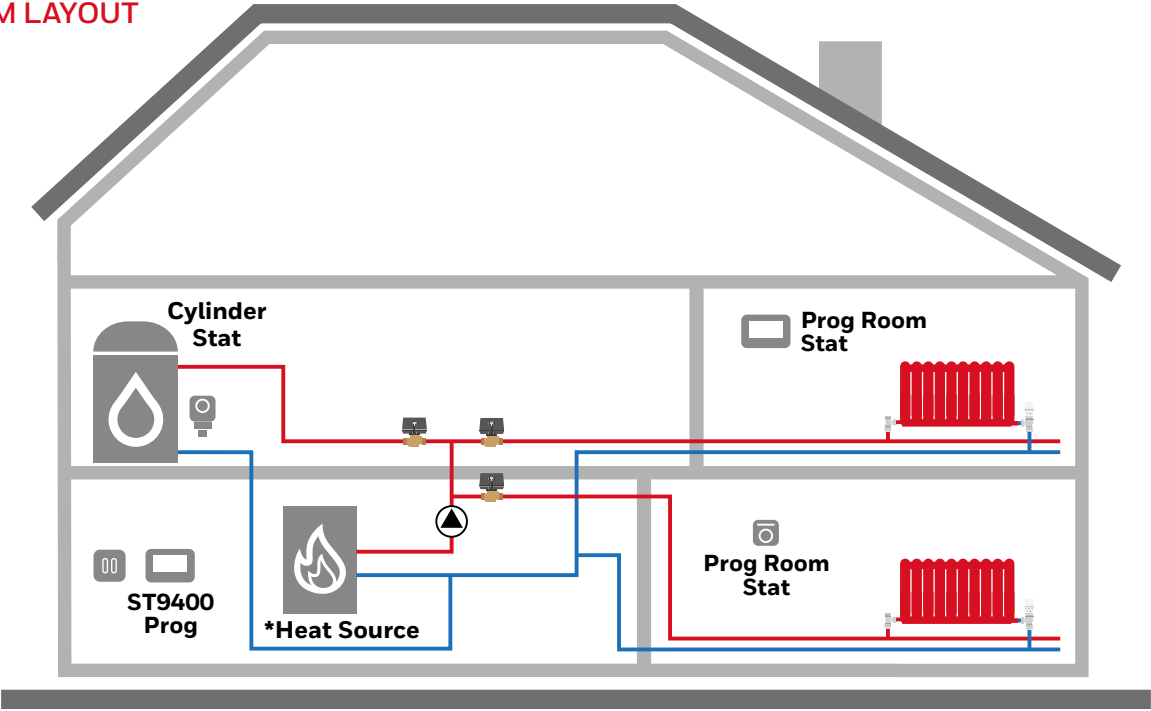
W Plan - VC Diverter Valve with standard controls.



\*Sundial W Plan installations are ideal for installations with hot water priority

# S Plan Plus

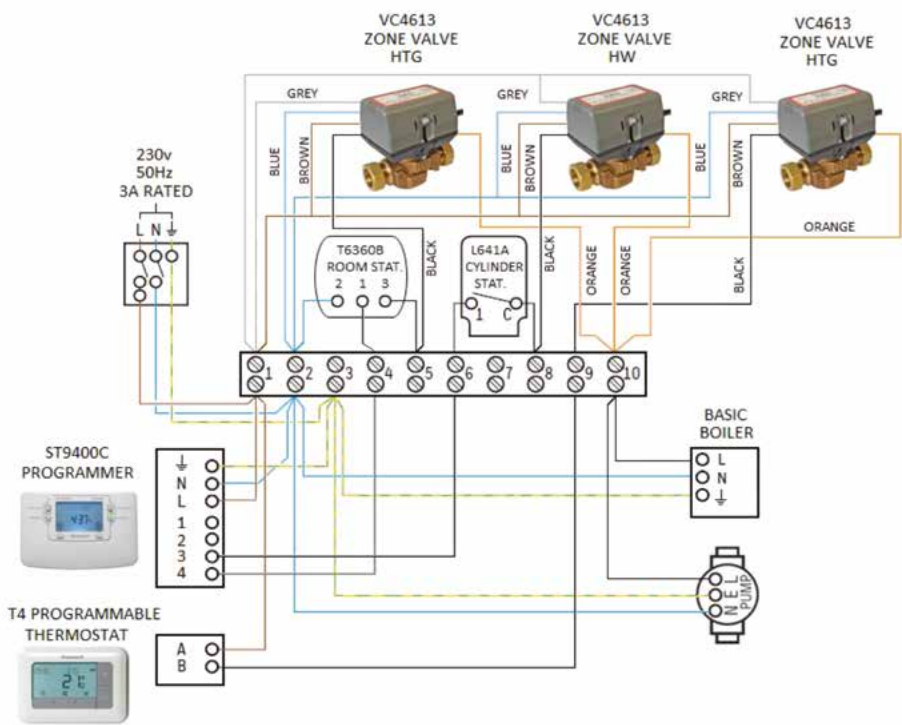
## SYSTEM LAYOUT



\*Heat sources include: boilers, heat pumps, district heating systems, etc.

## WIRING DIAGRAM

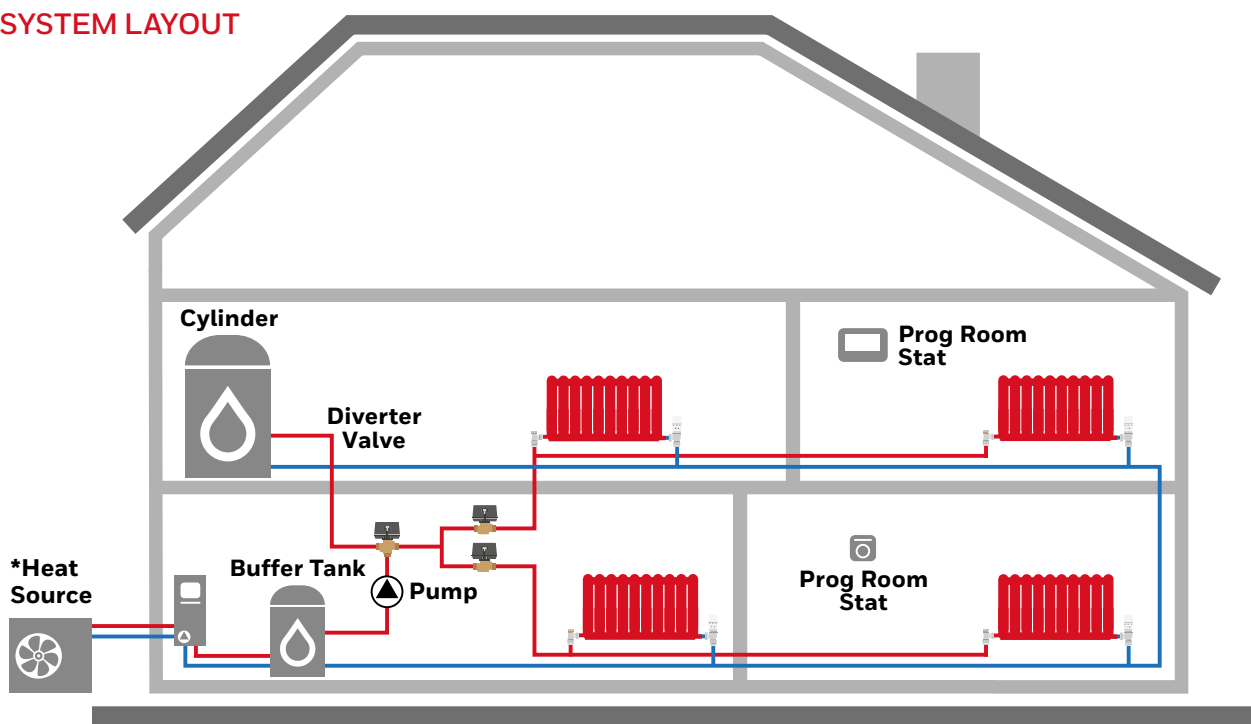
S Plan Plus - VC Valves with standard controls.



\*System can be upgraded to work with T6R

# Priority Hot Water & Two Zone Heating

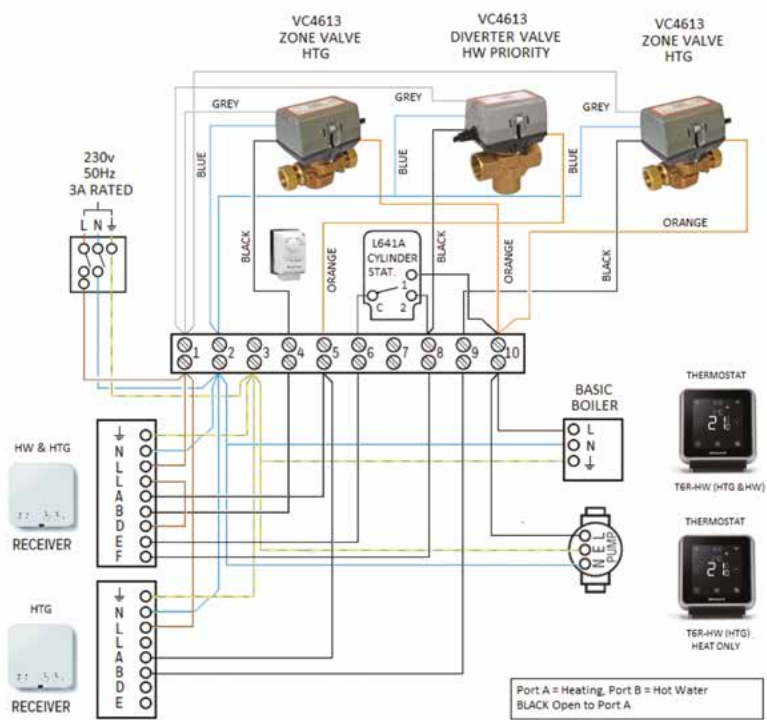
## SYSTEM LAYOUT



\*Heat sources include: boilers, heat pumps, district heating systems, etc.

## WIRING DIAGRAM

W Plan - 2 heating zones with smart controls T6R range.



\*One 3 - way diverter valve for priority hot water with two heating zones.

## Notes

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**For more information**

[resideo.com](https://resideo.com)

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