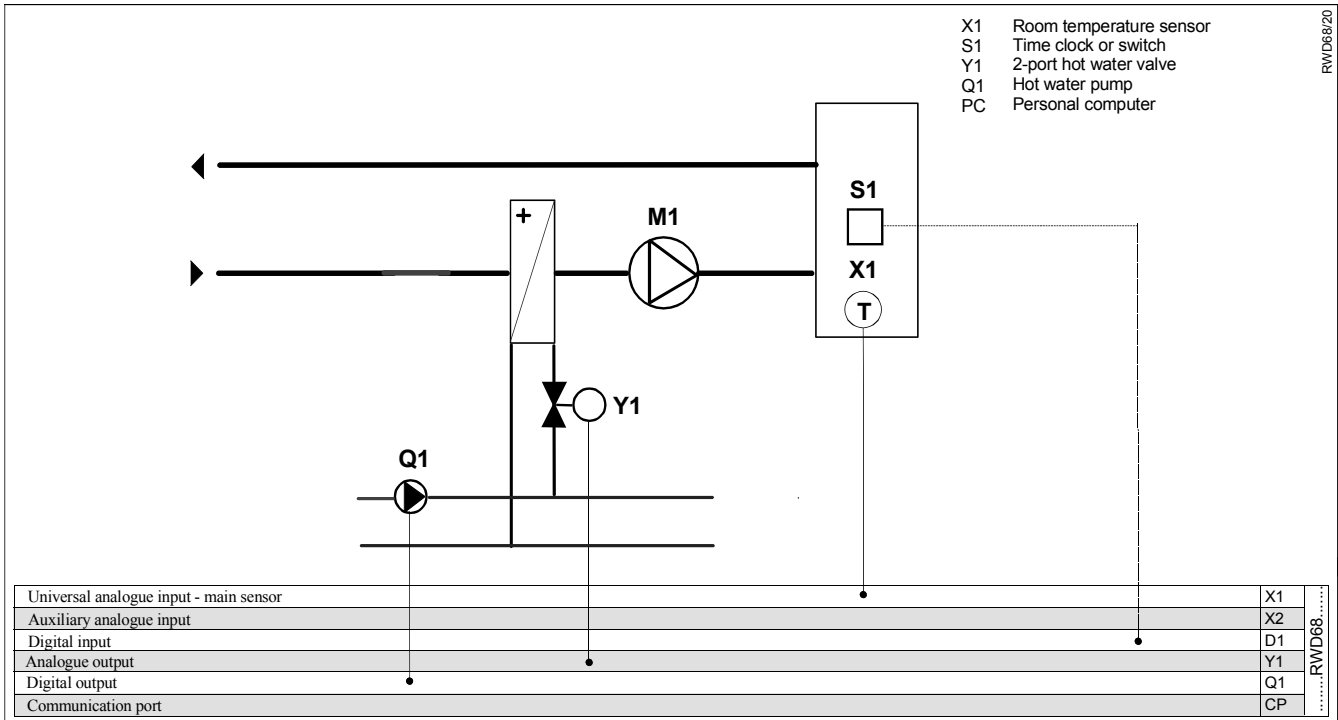


**RWD68 Universal Controller  
Application 20**

Room temperature control  
Hot water control valve  
Hot water pump output

- Control (P or PI)
- Room temperature control
- Proportional control ( 0..10Vdc ) of the hot water valve.
- Digital output to energise hot water pump ( dependent )
- Optional day / night set point adjustment .



**Supplemental features**

**Control**

- Room temperature sensor can be selected as Ni1000, Pt1000, or active sensor.
- Adjustable differential of digital output Q1.
- Adjustable proportional band of analogue output Y1.
- Integral action function selection and adjustment for output Y1.
- 24Vac controller supply voltage
- 0..10Vdc modulating control valve

**Operating modes**

- Day / night set points can be selected via time clock or switch.
- Dependent mode for the two heating outputs, meaning that the digital output set point and differential is set within the analogue output proportional band.

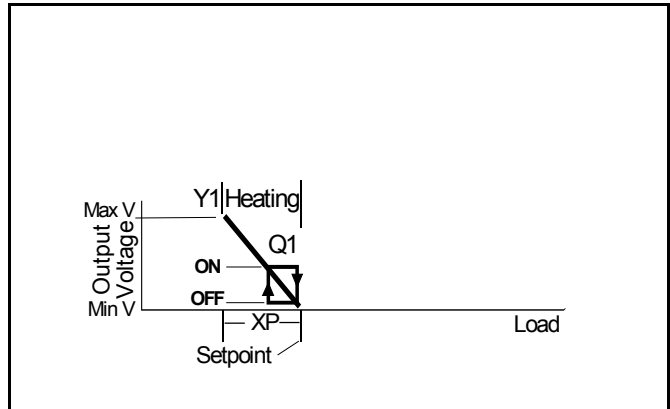
**Description of operation**

The temperature sensor senses the room conditions and on a fall in temperature the RWD68 via Y1 analogue output modulates the hot water control valve as determined by the heating set point and proportional band settings.

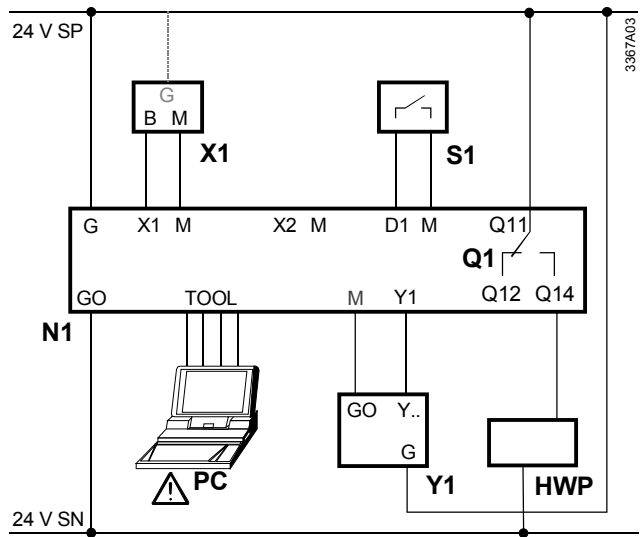
The Q1 digital output energises the hot water pump as determined by the Q1 ON and OFF settings as the hot water valve opens.

**Function diagram**

Heating sequences



**Connection diagram**





**RWD68**





- N1 RWD68 controllers
- X1 Main temperature sensor
- S1 Time clock or switch
- Q1 Potential-free relay contacts for 2-position
- Y1 Valve actuator with 0..10Vdc input
- HWP Hot water pump contactor
- PC Personal computer

## Main Display










The main display shows ,

- Whether Q1 is On or Off (  = off,  = on )
- Y1 output in Volts dc. (0..10V = 0..100% range)
- Whether day or night set point is selected. (☐ = day, ☐ = night)
- X1 value ( room temperature) in ° C.

Other displays are available by pressing the + button, and the various displays are listed below in sequence from the main display.

On entering any of the four set point displays, the setpoint on display can be adjusted by pushing the  enter/save button, increase value by pressing the  + button or decrease the value by pressing the  - button, and when the required value is reached, press the  enter/save button to save the new value.

The alternative displays return to the main display after 20 seconds duration.

Press buttons	Action	Current display	Selected display	Selected display comments
	Push + button	Q1 Y1 ☐ X1	SP – h ☐ 21.0c	heating day set point.
	Push + button	Y1 SP – c ☐ 21.0c	<b>Q1 SP – h ☐ 16.0c</b>	heating night set point.
	Push + button	<b>Q1 SP – h ☐ 16.0c</b>	X1 18.0c	X1 - main temperature sensor reading
	Push + button	X1 18.0c	<b>Y1 5.0</b>	Y1 – heating analogue output value in Vdc to one decimal point
	Push + button	<b>Y1 5.0</b>	Q1 ON	Q1 – heating digital output, display on or off.
	Push + button	<b>Q1 ON</b>	 20	Control sequence diagram and application number display.
	Push + button	 20	Q1 Y1 ☐ X1	Back to main display

Values shown are either default values or nominated for information only.

## Alternative

- 1) Energising and modulation of a fan speed inverter controller.