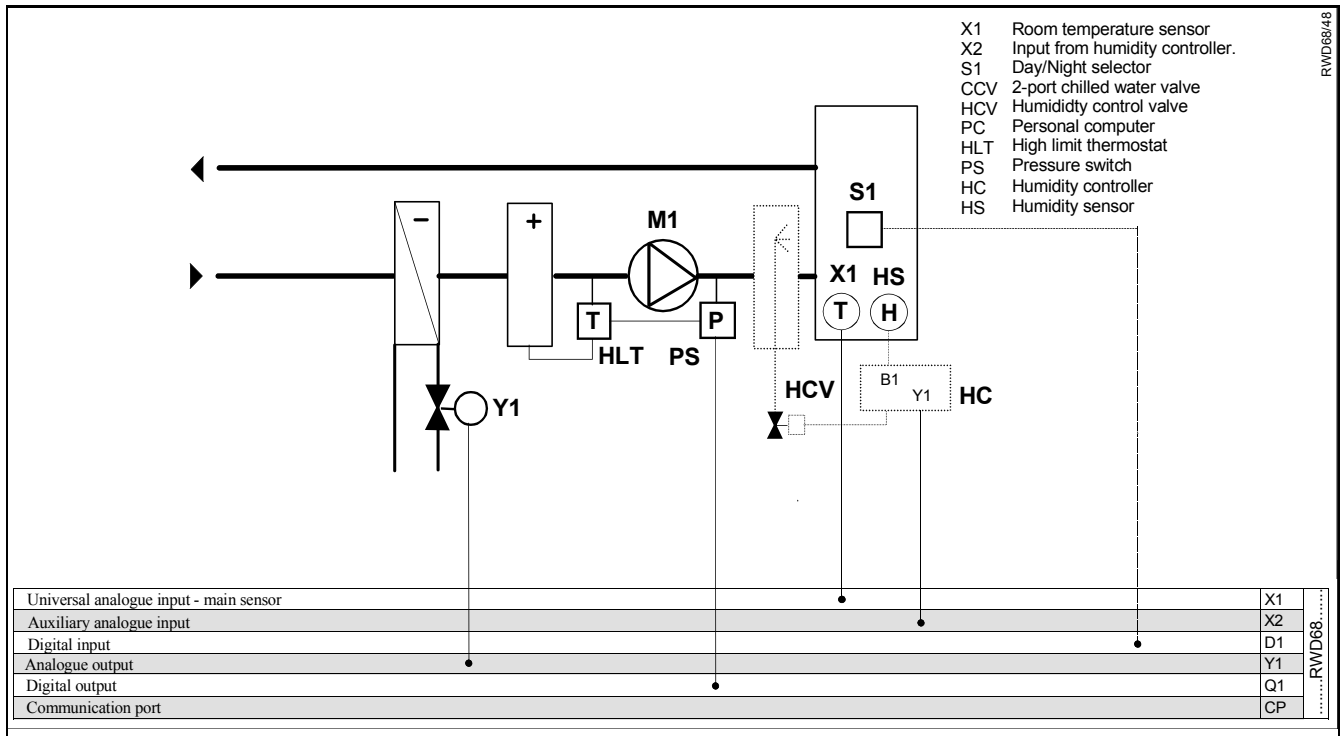


**RWD68 Universal Controller**  
**Application 48**  
**Maximum priority**

Room temperature control  
 Air electric heater  
 Chilled water control valve

- Control (P or PI)
- Room temperature control
- On/off control of the air electric heater
- Proportional control ( 0..10Vdc ) of the chilled water valve.
- Maximum priority function to control the cooling valve.
- Optional day / night set point adjustment .



**Supplemental features**

**Control**

- Room temperature sensor can be selected as Ni1000, Pt1000, or active sensor.(X1)
- Adjustable dead zone with separate heating and cooling set points.
- Adjustable differential of digital output Q1.
- Adjustable proportional band of analogue output Y1.
- Integral action function selection and adjustment.
- The cooling coil control valve is controlled by both the humidity controller and the temperature controller via the priority function in the temperature controller.

**Operating modes**

- Day / night set points can be selected via time clock or switch.

**Safety functions**

- A high limit manual reset thermostat is mounted downstream of the air electric heater, and de-energises the heater on excessive duct temperatures. This thermostat has to be manually reset following detection of overheating. It is often supplied by the supplier of the electric heater.
- A pressure switch is also specified to detect loss of static pressure in the duct, indicating loss of fan. This also de-energises the electric heater but it is auto reset and allows electric heater function following the detection of fan operation.
- These safety units can be connected directly in series with small electric heaters, but for larger electric heaters they are connected to a heater contactor that switches the electric heater.

### Description of operation

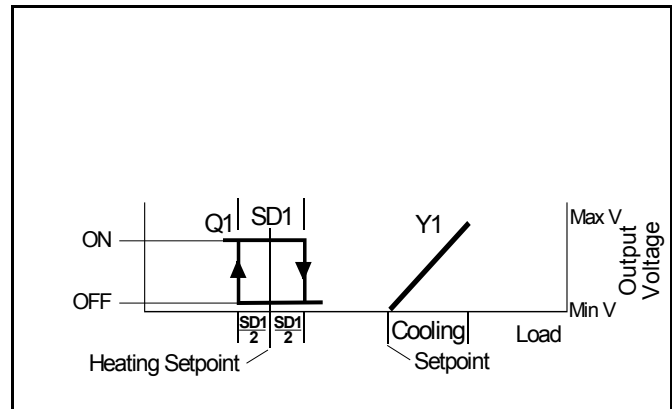
The main temperature sensor senses the room conditions and on a fall in temperature the RWD68 via Q1 digital output switches the air electric heater on and off as determined by the heating set point and differential settings.

On a rise in temperature the RWD68 via the Y1 analogue output modulates the chilled water valve as determined by the cooling set point and proportional band settings.

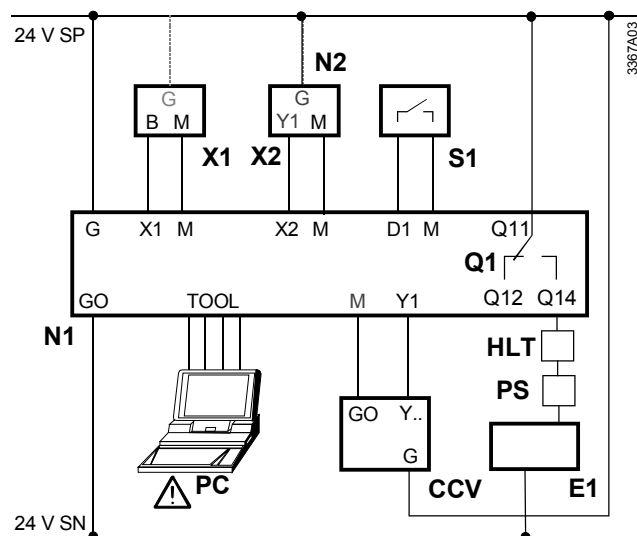
On a rise in relative humidity the output Y1 of the humidity controller is fed to the X2 temperature controller and via the priority function the highest call for cooling controls the position of the cooling valve.

### Function diagram

Heating and cooling sequences



### Connection diagram



#### RWD68

- N1 RWD68 temperature controller
- N2 RWD68 humidity controller
- X1 Main temperature sensor
- X2 Input from humidity controller.
- S1 Timer or summer/winter thermostat
- Q1 Potential-free relay contacts for 2-position output
- Y1 Proportional 0..10Vdc output
- CCV Chilled water control valve 0...10Vdc input
- E1 Electrical load 2-position control
- HLT High limit safety thermostat
- PS Pressure switch
- 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.

Press buttons	Action	Current display	Selected display	Selected display comments
▲	Push + button	Q1 Y1 ☐ X1	Q1 SP – h ☐ 25.0c	Q1 heating day set point.
▲	Push + button	Q1 SP – h ☐ 25.0c	Y1 SP – c ☐ 28.0c	Y1 cooling day set point.
▲	Push + button	Y1 SP – c ☐ 28.0c	Q1 SP – h ◐ 16.0c	Q1 heating night set point.
▲	Push + button	Q1 SP – h ◐ 16.0c	Y1 SP – c ◐ 32.0c	Y1 cooling night set point.
▲	Push + button	Y1 SP – c ◐ 32.0c	X1 26.0c	X1 - main temperature sensor reading
▲	Push + button	X1 26.0c	X2 5.0	X2 – cooling analogue input value in Vdc to one decimal point.
▲	Push + button	X2 5.0	Y1 5.0	Y1 – cooling analogue output value in Vdc to one decimal point
▲	Push + button	Y1 5.0	Q1 OFF	Q1 – heating digital output, display on or off.
▲	Push + button	Q1 OFF	MaxPrior <input type="checkbox"/> 48	Control sequence diagram and application number display.
▲	Push + button	MaxPrior <input type="checkbox"/> 48	Q1 Y1 ☐ X1	Back to main display

Values shown are either default values or nominated for information only

## Alternatives

- 1) Modulating chilled water valve and two position heating valve.