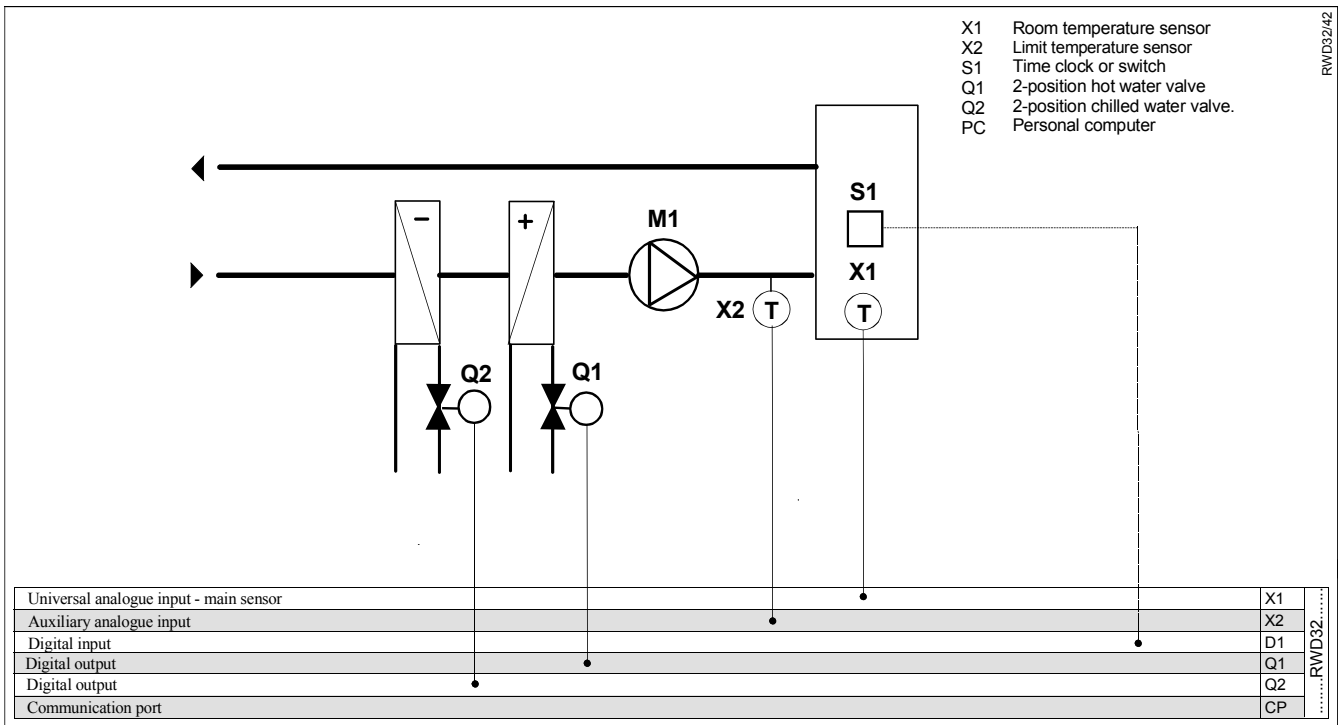


**RWD82 Universal Controller**  
**Application 43**  
**Relative limit control**

Room temperature control  
 Hot water control valve  
 Chilled water control valve

- Control ( 2 position )**
- Room temperature control**
- 2 position control of the hot water control valve**
- 2 position control of the chilled water control valve**
- Relative maximum and / or minimum limit control of the supply air.**
- Optional day / night set point adjustment .**



**Supplemental features**

**Control**

- Room temperature sensor can be selected as Ni1000, Pt1000, or active sensor.
- Adjustable dead zone with separate heating and cooling set points.
- Adjustable differential of digital output Q1.
- Adjustable differential of digital output Q2.
- 24Vac controller supply voltage
- 24Vac two position control valves
- Duct temperature sensor can be selected as Ni1000, Pt1000, or active sensor.(X2)
- Relative maximum and / or minimum supply air temperature control.

**Operating modes**

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

**Description of operation**

The temperature sensor senses the room conditions and on a fall in temperature the RWD82 via Q1 digital output opens and closes the two position heating valve as determined by the heating set point and differential settings.

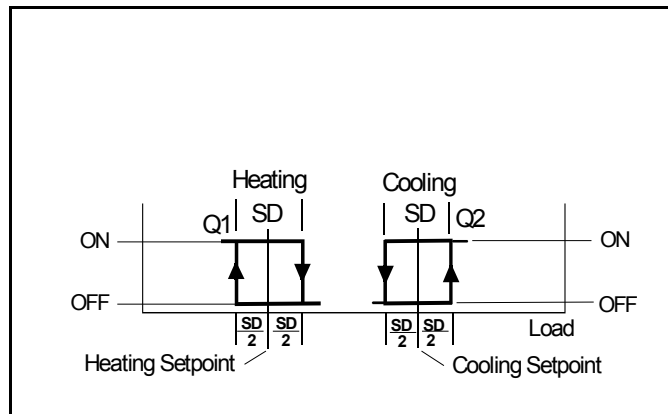
The temperature sensor senses the room conditions and on a rise in temperature the RWD82 via Q2 digital output opens and closes the two position chilled water valve as determined by the cooling set point and differential settings.

Relative supply air control is maintaining maximum and/or minimum difference between supply air and room temperature setpoint when the temperature difference drops below or exceeds the limiter setpoints.

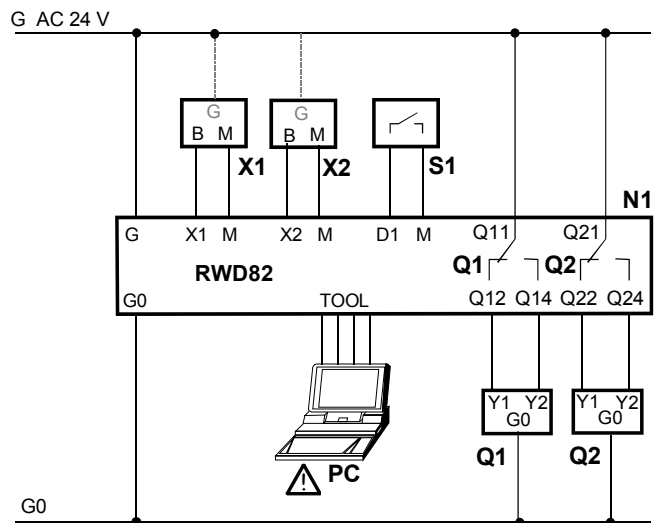
The limiter function overrides the standard control function to maintain the limiter setpoints.

**Function diagram**

Heating and cooling sequences



**Connection diagram**



**RWD82**

- N1 RWD82 controller
- X1 Main temperature sensor
- X2 Limit temperature sensor
- S1 Time clock or switch
- Q1 24Vac two position control valve
- Q2 24Vac two position control valve
- PC Personal computer

**Main Display**

The main display shows ,

- a) Whether Q1 is On or Off (  = off,  = on )
- b) Whether Q2 is On or Off (  = off,  = on )
- c) Whether day or night set point is selected. (☐ = day, ( = night)
- d) 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 Q2 ☐ X1	Q1 SP – h ☐ 25.0c	Q1 heating day set point.
▲	Push + button	Q1 SP – h ☐ 25.0c	Q2 SP – c ☐ 28.0c	Q2 cooling day set point.
▲	Push + button	Q2 SP – c ☐ 28.0c	Q1 SP – h ( 16.0c	Q1 heating night set point.
▲	Push + button	Q1 SP – h ( 16.0c	Q2 SP – c ( 32.0c	Q2 cooling night set point.
▲	Push + button	Q2 SP – c ( 32.0c	X1 21.0c	X1 - main temperature sensor reading
▲	Push + button	X1 21.0c	X2 18.0C	X2 – limit temperature sensor reading
▲	Push + button	X2 18.0C	Q1 ON	Q1 – heating digital output, display on or off.
▲	Push + button	Q1 ON	Q2 OFF	Q2 – cooling digital output, display on or off.
▲	Push + button	Q2 OFF	LIM ☐☐ 43 REL	Control sequence diagram and application number display.
▲	Push + button	LIM ☐☐ 43 REL	Q1 Q2 ☐ X1	Back to main display

Values shown are either default values or nominated for information only

**Alternatives**

- 1) One stage electric heating and one stage of refrigerated cooling.
- 2) One stage of electric heating and two position control of chilled water valve.