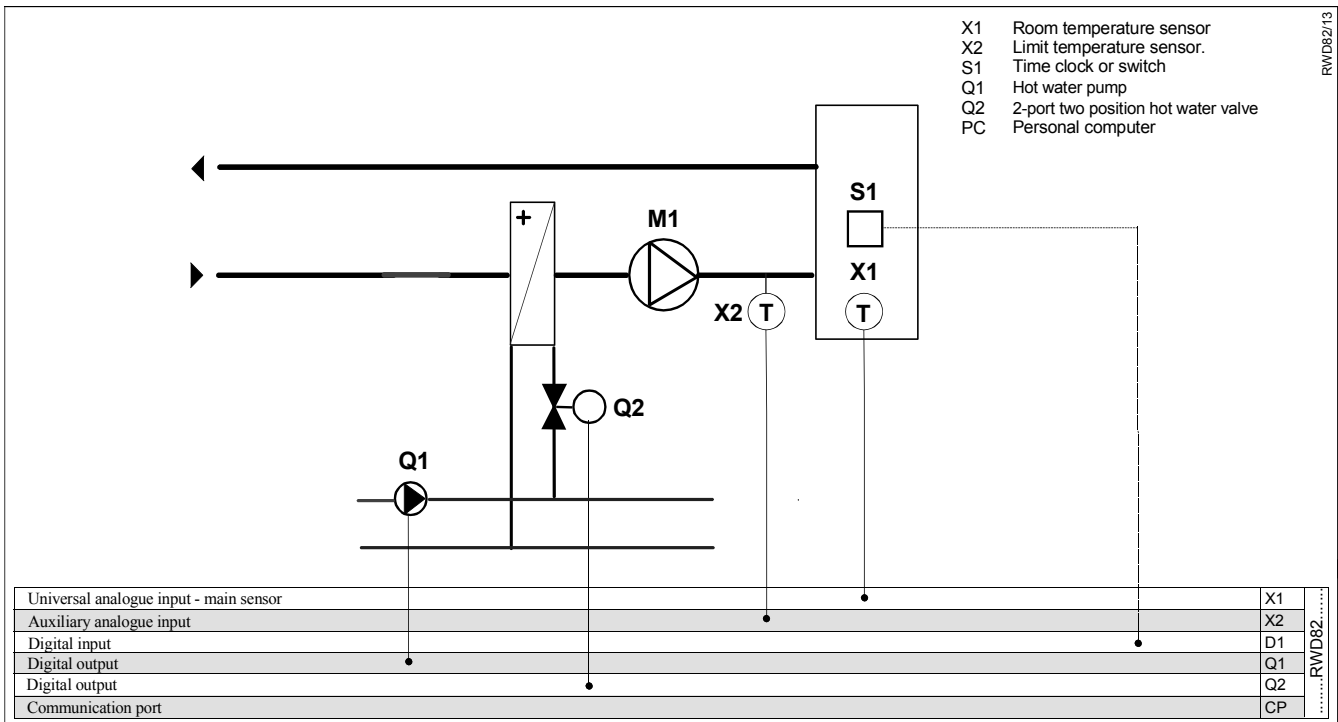


RWD82 Universal Controller
Application 13
Relative limit control

Room temperature control
 Hot water control valve
 Hot water pump output

- Control two stage(2 position)
- Room temperature control
- 2 position control of the hot water control valve
- Digital output to energise hot water pump (dependent)
- 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.
- Combined adjustable differential of digital outputs Q1 and Q2.
- Adjustable ON position of Q1.
- 24Vac controller supply voltage
- 24Vac two position control valve
- 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.
- Dependent mode for the two heating outputs, meaning that there is one set point only, one differential adjustment across combined Q1 and Q2, with the ON position of Q1adjustable.

Description of operation

The temperature sensor senses the room conditions and on a fall in temperature the RWD82 via Q1 digital output energises the hot water pump.

A further fall in temperature Q2 opens the two position hot water valve.

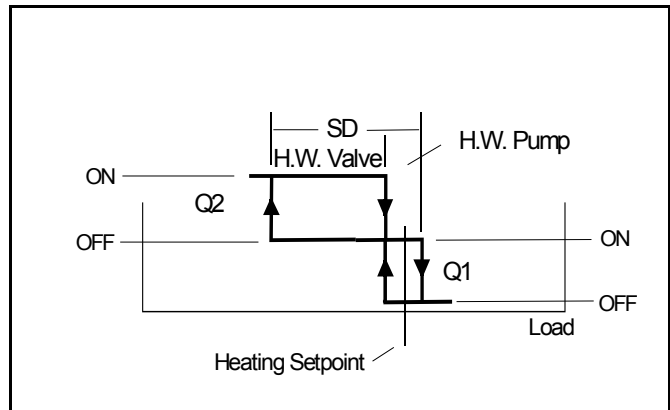
In this application the Q1 – ON position should be set to 5 – 10% of the SD differential setting.

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.

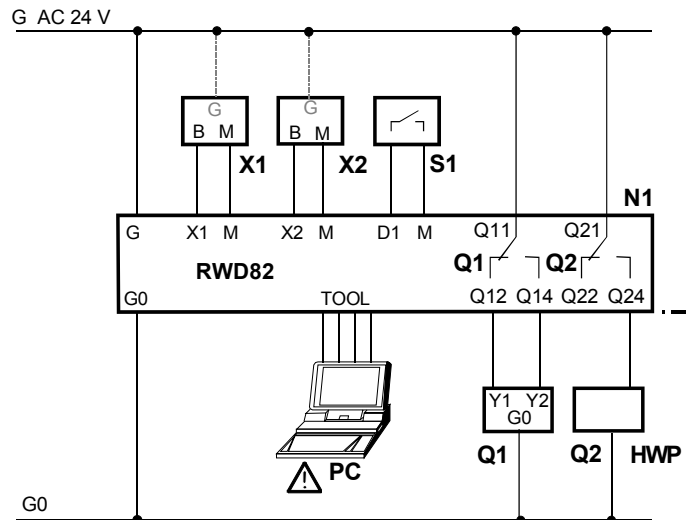
The limiter function overrides the standard control function to maintain the limiter setpoints.

Function diagram

Heating sequences



Connection diagram



RWD82

- N1 RWD82 controllers
- X1 Main temperature sensor
- X2 Limit temperature sensor
- S1 Time clock or switch
- Q1 Hot water pump output
- Q2 24Vac two position valve actuator
- HWP Hot water pump contactor
- PC Personal computer

Main Display

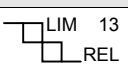
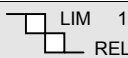
The main display shows ,

- 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	SP – h ☒ 25.0c	heating day set point.
▲	Push + button	SP – h ☒ 25.0c	SP – h ◻ 16.0c	heating night set point.
▲	Push + button	SP – h ◻ 16.0c	X1 18.0c	X1 - main temperature sensor reading
▲	Push + button	X1 18.0c	X2 25.0c	X2 - limit temperature sensor reading
▲	Push + button	X2 25.0c	Q1 ON	Q1 – hot water pump digital output, display on or off.
▲	Push + button	Q1 ON	Q2 ON	Q2 – heating valve digital output, display on or off.
▲	Push + button	Q2 ON		Control sequence diagram and application number display.
▲	Push + button		Q1 Q2 ☒ X1	Back to main display

Values shown are either default values or nominated for information only