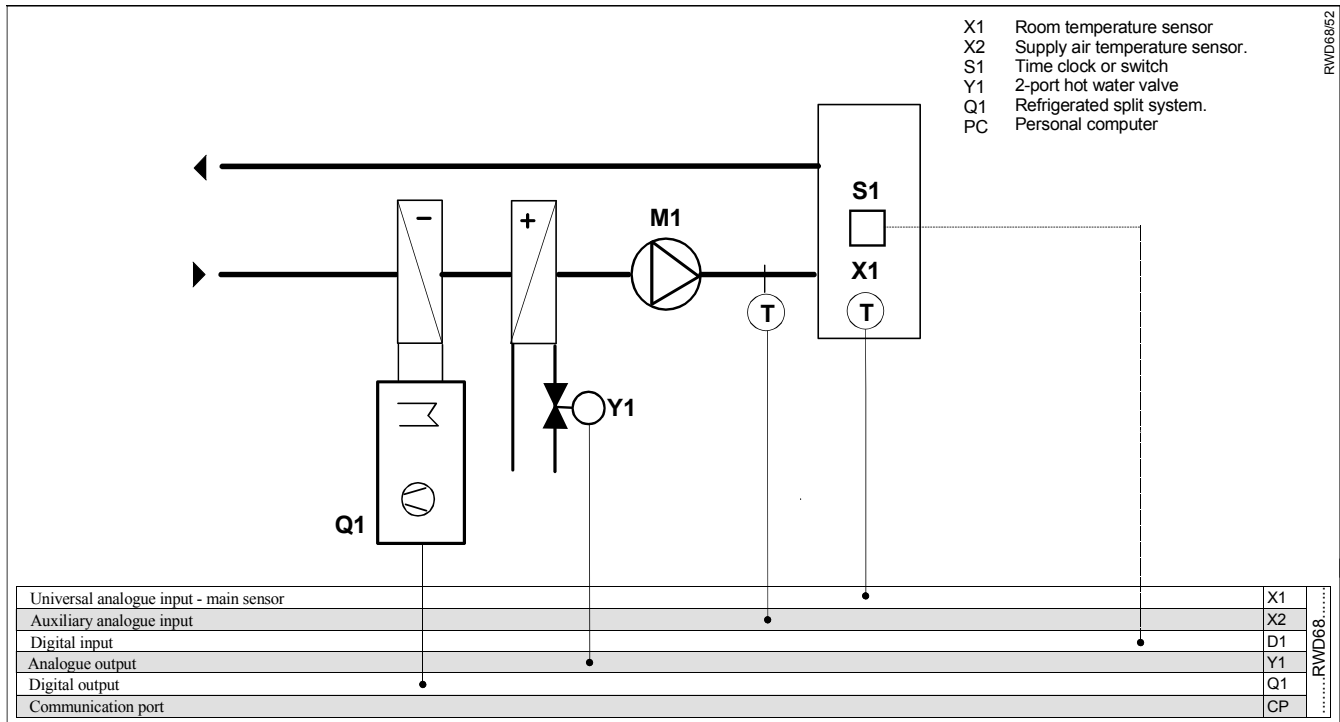


RWD68 Universal Controller
Application 52
Absolute limit control

Room temperature control
 Hot water control valve
 DX cooling

- Control (P or PI)
- Room temperature control
- Proportional control (0..10Vdc) of the hot water valve.
- On/off control of DX cooling (refrigeration package unit)
- Absolute 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 proportional band of analogue output Y1.
- Integral action function selection and adjustment.
- Duct temperature sensor can be selected as Ni1000, Pt1000, or active sensor.
- Absolute maximum and / or minimum supply air temperature control.

Operating modes

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

Safety functions

- Safety functions are built into the condensing unit of the refrigerated split system.

Description of operation

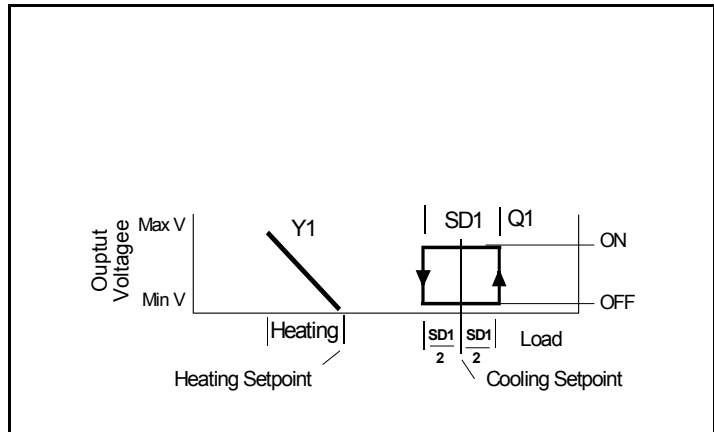
The temperature sensor senses the room conditions and on a fall in temperature the RWD68 via Y1 analogue output modulates the hot water valve as determined by the heating set point and proportional band (XP) settings.

On a rise in temperature the RWD68 via the Q1 digital output switches the condensing unit of the refrigerated split system to provide cooling as determined by cooling set point and differential settings.

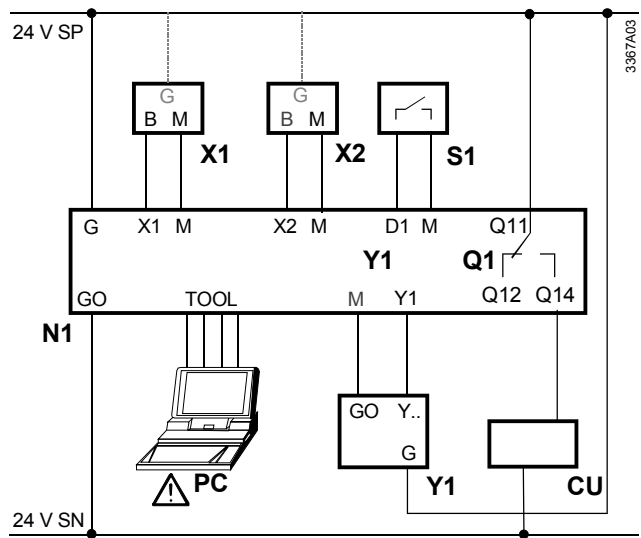
The limit duct sensor senses the supply air temperature, and maintains the absolute (actual) maximum and / or minimum supply air temperatures when the temperature drops below or exceeds the limiter setpoints. The limiter function overrides the standard control function to maintain the limiter setpoints.

Heating and cooling sequences

Function diagram



Connection diagram





RWD68

- N1 RWD68 controllers
- X1 Main temperature sensor
- X2 Limit temperature sensor.
- S1 Time clock or switch for day/night setpoint select
- Q1 Potential-free relay contacts for 2-position
- Y1 Heating control valve
- CU Condensing unit.
- PC Notebook computer

Main Display



The main display shows ,

- a) Whether Q1 is On or Off ( = off,  = on)
- b) Y1 output in Volts dc. (0..10V = 0..100% range)
- 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.

Press buttons	Action	Current display	Selected display	Selected display comments.
▲	Push + button	Q1 Y1 ☐ X1	Y1 SP – h ☐ 25.0c	Y1 heating day set point.
▲	Push + button	Y1 SP – h ☐ 25.0c	Q1 SP – c ☐ 28.0c	Q1 cooling day set point.
▲	Push + button	Q1 SP – c ☐ 28.0c	Y1 SP – h (16.0c	Y1 heating night set point.
▲	Push + button	Y1 SP – h (16.0c	Q1 SP – c (32.0c	Q1 cooling night set point.
▲	Push + button	Q1 SP – c (32.0c	X1 18.0c	X1 - main temperature sensor reading
▲	Push + button	X1 18.0c	X2 19.0 C	X2 – Auxiliary temperature limit sensor reading.
▲	Push + button	X2 19.0 C	Y1 5.0	Y1 – heating analogue output value in Vdc to one decimal point
▲	Push + button	Y1 5.0	Q1 OFF	Q1 – cooling digital output, display shows if relay is on or off.
▲	Push + button	Q1 OFF	LIM  52 ABS	Control sequence diagram and application number display.
▲	Push + button	LIM  52 ABS	Q1 Y1 ☐ X1	Back to main display.

Values shown are either default values or nominated for information only

Alternatives

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