

Project: Demand controlled ventilation in class room



Room Control DK3

The built-in room temperature sensor ST1 controls in sequence the heating demand in following order via control unit CU1. With the built-in SQ-VOC sensor the fan for ventilation will be forced to increase the air quality.

Step 1. Reduce the airflow for supply- and return air by closing the dampers DA1 and DA2 from their mechanical preadjusted max-position to their mechanical preadjusted min-position to decrease respective airflow.

Step 2. Open control valve CV1, to increase the heating system to reach setpoint setting on the control unit CU1.

With decreasing heating demand the control is converted to normal temperature control.

Setpoint Temperature CU1/ST1 21°C ± 4°C

When the room has more than one control valve in the same room, they will work in parallell.

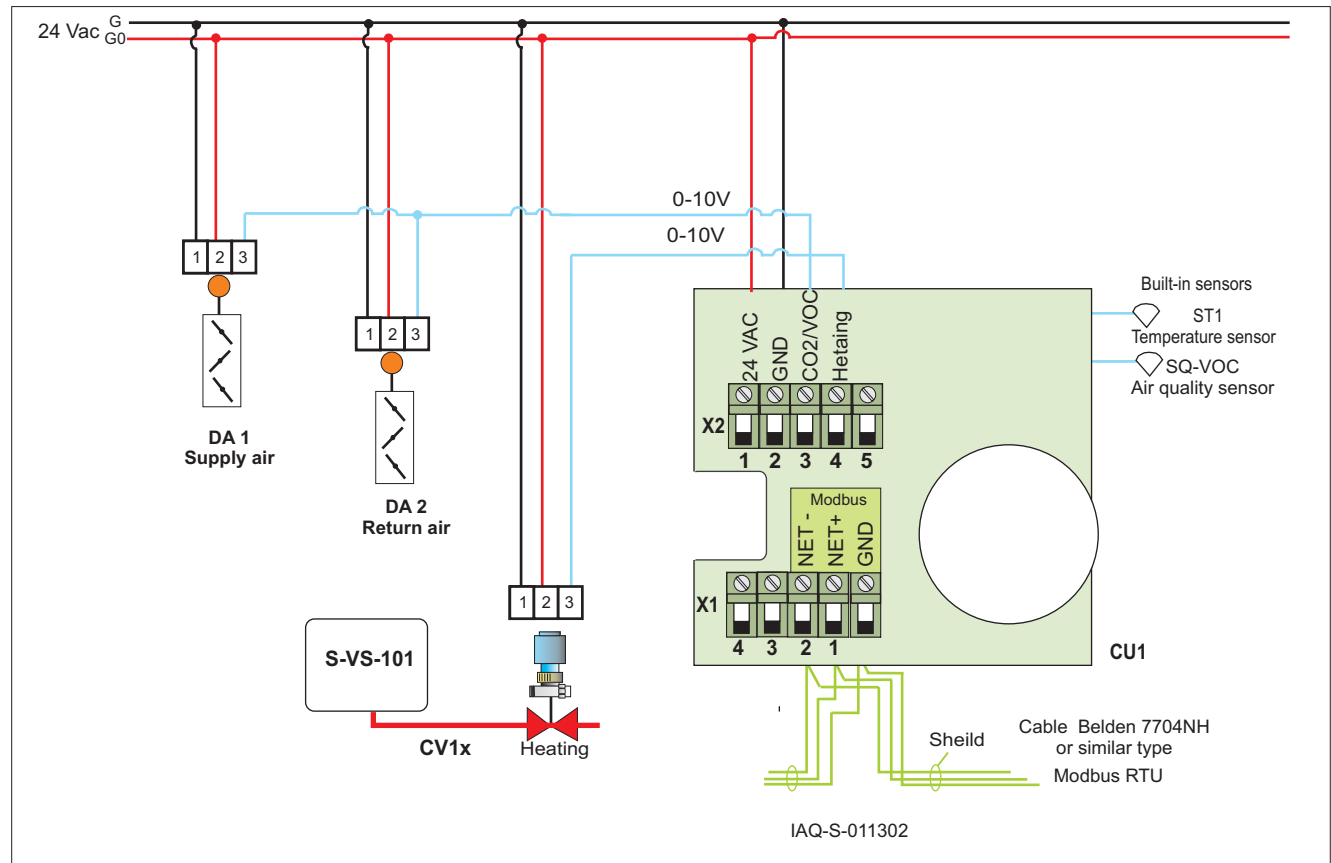
Forced ventilation with dampers, DA1 and DA2 control will be controlled by SQ-VOC sensor sensing higher value of air quality than the preset fixed setpoint. (1000 ppm)
The dampers will remain in max position as long as the SQ-VOC sensor register a higher value of air quality.

The supply- and return air dampers close to the temperature control position, when the SQ-VOC sensor register the lower preset value of air quality. (800ppm)

Setpoint Start 1 000 ppm

Setpoint Stop 800 ppm

Wiring diagram



| Item | Article | Type | Remark | Date |
|--------|--------------------|---------|--------|------------|
| CU1 | Room controller | CO2/VOC | | 2010-07-31 |
| ST1 | Temperature sensor | NTC | | |
| DA1 | Damper actuator | 0-10V | RM8 | |
| ST1B | Damper actuator | 0-10V | RM8 | |
| SV2 | Valve actuator | 0-10V | EAV | |
| Valve | 2-ways | 15mm | FVB | |
| SQ-VOC | CO2/VOC sensor | | | |