

Air quality sensor

SCR, SQR



Features:

- 3 sensors in one device (CO₂/VOC, %RH, °C)
- 2 selectable type analog outputs (0..10V/4..20mA)
- Relay output for on/off control
- RS-485 Modbus interface
- PID functionality for VAV or heater control
- Touch sensitive buttons & LED light indication

3 sensors in one device

SCR and SQR are air quality sensors designed for ventilation systems. Sensor monitors 3 different type sensing elements simultaneously – CO₂ (ppm) or VOC (%), relative humidity (%RH), air temperature (°C). Sensor types:

Sensor	CO ₂	VOC	%RH	°C
SCR	+		+	+
SQR		+	+	+

Analog control outputs

2 analog outputs are available for reading measured air parameters. AO1 is always CO₂ or VOC (depending on type), while AO2 is user selectable - %RH or °C. Configuration with switches allows to set for voltage (V) or current (mA) type outputs and enable offset (for 2..10V or 4..20mA outputs). LED light on front of the housing indicates air parameter (AO1 or AO2) actual measured value.

Dry contact relay output provided for on/off type control. Setting point for threshold can be adjusted using touch sensitive buttons or onboard potentiometer.

Sensing ranges:

Element	Range
CO ₂	0..2'000 ppm (0..5'000 ppm)
VOC	0..100% (0% - clean air)
%RH	0..100 %RH
°C	0..+50 °C

RS-485 Modbus interface

Optionally, RS-485 Modbus communication can be used to communicate with the sensor. More options are available using digital

interface – monitoring all three sensing elements at the same time, remote setpoint and other parameters configuration. Up to 8 different Modbus ID addresses in 80..87 range can be set on-site using switches configuration or any of 1..247 address using Modbus register.

PID control functionality

Variable Air Volume (VAV) damper actuator, fan or heater can be directly controlled by the SCR or SQR sensor using PID algorithm. For such control, switch on the board should be set to enable PID. Differently than having real-time sensor readings on the outputs, they will function as direct control signals for VAV actuator, fan or heater. Output will change to maintain user set setting point. Relay output will also function in PID mode, optimized for on/off control.

Technical data

Supply voltage	24 Vac / 24 Vdc
Ambient	0..+50 °C, 0..90%RH, non-condensing
Protection class	IP30
Dimensions	80x80x26 mm
Accuracy	CO ₂ : ±6 % typical VOC: ±15 % %RH: ±3 %RH °C: ±1.0 °C
Response time	60 sec.

CE marking

SCR and SQR sensors conforms to the requirements of the EMC directive through standard EN 61326-1.