DETECT™ Quality
Electronic carbon dioxide and temperature sensor DETECT Q

General
DETECT Q is an electronic CO₂ and temperature sensor which is used for controlling the ventilation requirement and heating/cooling of premises.
DETECT Q 1 has an integrated display that shows the current CO₂ and temperature readings.

Quick facts
► CO₂ and temperature sensor for airing – cooling – heating
► Also available for duct installation
► Measurement range: 0 - 2000 ppm CO₂
► Integrated display for CO₂ and temperature readings
► Provision for simple change to the preferred temperature set point
► 3 outputs for various applications
► Also available in a simpler version with CO₂ only without display; DETECT Q 0 is designed for Swegon’s system WISE for demand controlled ventilation.
Technical description

Design
DETECT Q is a carbon dioxide sensor of the IR-type configured with an analogue 0-10 V DC output signal proportional to the CO₂ content between 0-2000 ppm. Changes to the measurement range are possible using a computer connection or integrated push buttons. The sensor also has an integrated thermistor for temperature measurement, whose analogue signal is combined with the CO₂ signal. Normally only the CO₂ signal is used in the WISE system. The relay output should only be connected to a 24 V AC supply that closes at CO₂ >900 ppm and opens at CO₂ <700 ppm.

The DETECT Q is also available in a simpler version, type DETECT Q 0, for CO₂ measurements only. The DETECT Q also has an output for heating via radiator.

Materials and surface treatment
Enclosure is manufactured in light beige plastic.

Installation
DETECT Q is ideally installed between 1.5 to 2 m above the floor on any non-sunlit wall in the room. The DETECT Q 2, which is intended for duct installation, should be fitted in the extract air duct as close to the room as possible. See Figure 1.

Commissioning
DETECT Q 1 and 2 have pushbuttons that permit adjustment of the preset set value for temperature ±2K to OUT 1 and 4. A computer, special cable and UIP software can be used for changing and graphically checking all the set points. The DETECT Q 0 has fixed set points that cannot be changed.

Maintenance
Dirty products must be cleaned by wiping with a dusting cloth or vacuum cleaning only. Further maintenance is normally not needed.

Declarations
Declaration of construction materials is available for download from www.swegon.com

Wiring
The DETECT Q is connected to a 24 V AC supply and is fuse protected with max 6 A. All other connections are made according to the wiring diagram for the product to which the DETECT Q is to be connected. The outputs can be loaded with several actuators on condition that the resulting load resistance is > 5 kΩ.

24V AC (GO) 0-10 V DC 0-10 V DC 0-10 V DC
“C+CO₂” CO₂ CO₂
1 2 3 4 5 6 7 8
OUT1 OUT2 OUT1 M Relay Relay OUT14
DETECT Q 1 & 2

Figure 2. Wiring diagram, DETECT Q 1 and 2.

0-10 V DC 2-10 V DC
CO₂ CO₂
1 2 3 4
OUT1 OUT2
DETECT Q 0

Figure 3. Wiring diagram, DETECT Q 0.

Electrical data

Supply voltage 24V ±20% AC/DC
Power consumption 3VA
Ambient air temperature, operation 0°C - +50°C
Reaction time 2 min
Humidity 0-95% RH (not condensing
Enclosure class, room installation IP 20
Enclosure class, duct installation IP 65
Load on OUT1-4 >5kΩ

DETECT Q 1 and 2
OUT1 0-10V DC 500-1000 ppm and p-band 22-23°C
OUT2 0-10V DC 0-2000 ppm
OUT4 heating control 0-10V DC p-band 19-21°C
Relay, on >900 ppm, off <700 ppm 24V AC max 0.5 A

DETECT Q 0
OUT1 0-10V DC 0-2000 ppm
OUT2 2-10V DC 0-2000 ppm
**Sizing**

Diagram 1-3 shows the input signal from temp. and CO₂ outputs, OUT 1 and 2. For the OUT 4, the 19-21° P-band will be applicable.

**Diagrams 1 and 2**

Diagrams 1 and 2 show the actual value; the largest signal is the one placed on OUT 1, not applicable to the DETECT Q 0.

**Dimensions**

**DETECT Q0**

**DETECT Q1**

**DETECT Q2**

**Order key**

**DETECT Q0/Q1**

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<th>Carbon dioxide sensor</th>
<th>DETECT Q</th>
</tr>
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<tbody>
<tr>
<td>Model:</td>
<td>a</td>
</tr>
<tr>
<td>Version:</td>
<td>-b</td>
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**DETECT Q2**

<table>
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</table>

**Specification example**

GI XX

Swegon’s type DETECT Q carbon dioxide sensor with the following functions:

- CO₂ measurement
- Temperature measurement
- Airing – heating – cooling regulation
- Integrated display

Type: DETECT Qa 1 xx items