

DETECT™ Quality

Electronic carbon dioxide and temperature sensor DETECT Q



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 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

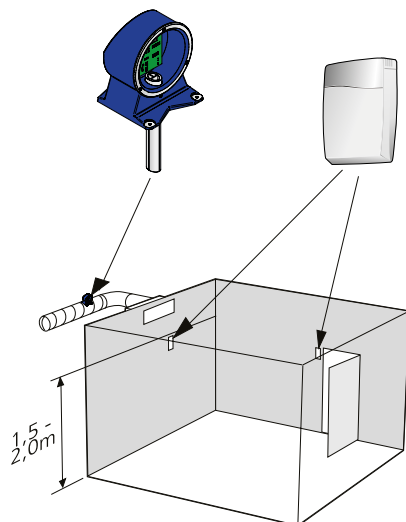


Figure 1. Location of the sensor and DETECT Q room unit.

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 is to be connected. The outputs can be loaded with several actuators on condition that the resulting load resistance is > 5 kΩ.

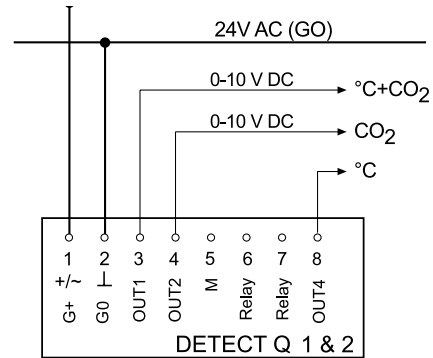


Figure 2. Wiring diagram, DETECT Q 1 and 2.

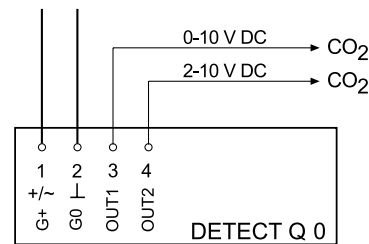


Figure 3. Wiring diagram, DETECT Q 0.

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.

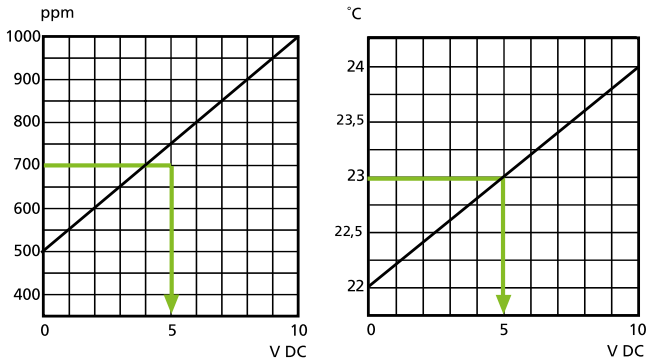
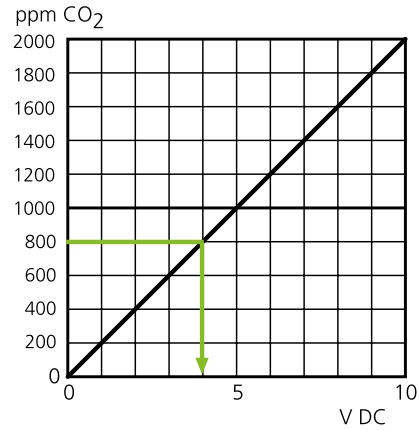


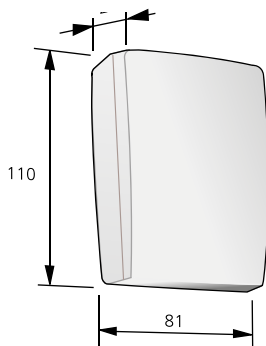
Diagram 3

Diagram 3 shows the actual CO₂ value, in the 0-2000 ppm range, for the output that is normally used in system WISE. OUT 2 applies to the DETECT 1 and DETECT 2. OUT 1 applies to the DETECT 0.

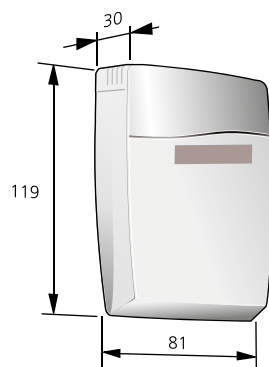


Dimensions

DETECT Q0



DETECT Q1



DETECT Q2

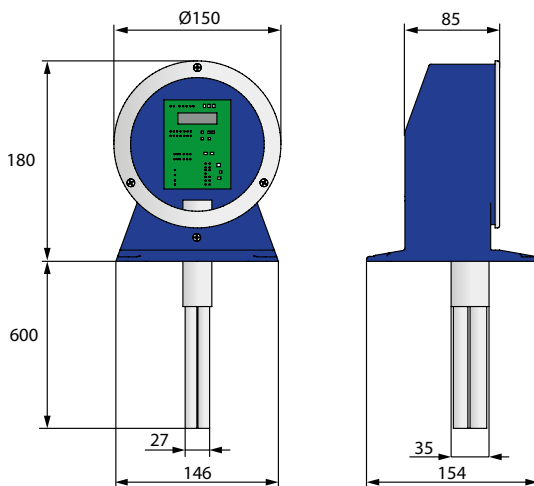


Figure 4. DETECT Q, dimensions.

Order key

DETECT Q0/Q1

Carbon dioxide sensor DETECT Q a -b

Version:

Model:

0 = room installation without display

1 = room installation

DETECT Q2

Carbon dioxide sensor DETECT Q b -2

Version:

Model:

2 = duct installation

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