

Electronic carbon dioxide and temperature sensor



General

KSC is an electronic CO₂ and temperature sensor which is used for controlling the ventilation requirement and heating/cooling of premises.

The KSC 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.
- As an extra option, there is a LONTALK® connection® for communication with master system or room controller.
- Also available in a simpler version with CO₂ only without display; KSC 0 is designed for Swegon's system for demand controlled ventilation.

Technical description

Design

KSC 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 can be combined with the CO₂ signal. Normally only the CO₂ signal is used in the e.r.i.c. system. The relay output should only be connected to a 24 V AC supply that closes at CO₂ >900 ppm and opens at CO₂ <800 ppm.

The KSC is also available in a simpler version, type KSC 0, for CO₂ measurements only. The KSC also has an output for heating via radiator. KSC is also available in a version with LONTALK® communications.

Materials and surface treatment

Enclosure made of light beige plastic.

Installation

KSC is ideally installed between 1.5 to 2 m above the floor on any non-sunlit wall in the room. The KSC 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

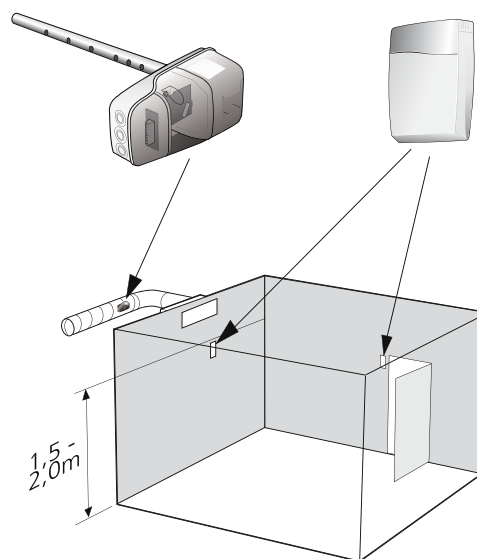
KSC 1 and 2 have pushbuttons that permit adjustment of the preset set values for temperature and CO₂ connected to OUT 1, 2 and 4. A computer, special cable and UIP software can be used for changing and graphically checking all the set points. The KSC 0 has fixed set points that cannot be changed.

Maintenance

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

Declarations

The product is CE marked. The CE Declaration and Declaration of Construction Materials are available from www.swegon.com.

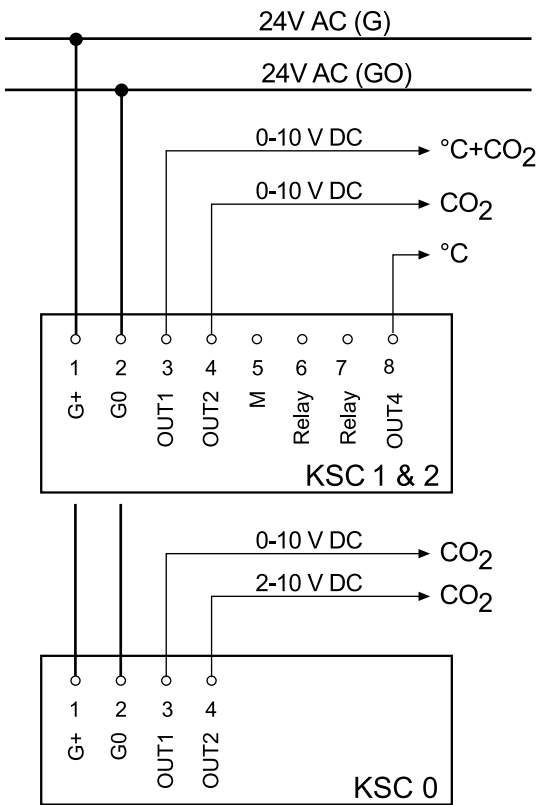


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Figure 1. Location of the sensor and KSC room unit .

Wiring

The KSC 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 KSC is to be connected, see the KCD, KCW, KRF or VAR. The outputs can be loaded with several actuators on condition that the resulting load resistance is > 5 kΩ.



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
KSC 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
KSC 0	
OUT1 0-10V DC	0-2000 ppm
OUT2 2-10V DC	0-2000 ppm

Figure 2. Wiring diagram, KSC.

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 KSC 0.

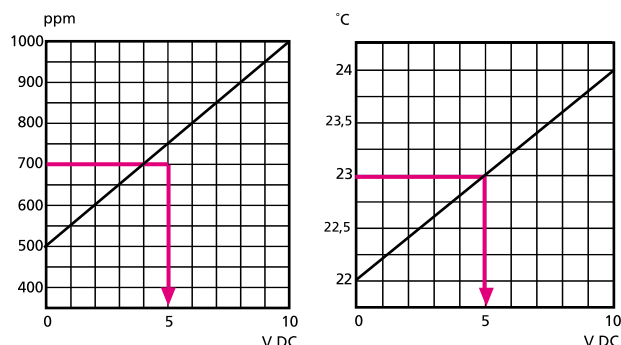
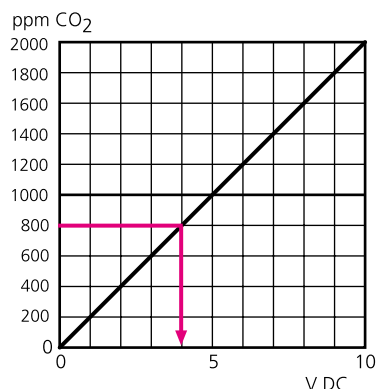
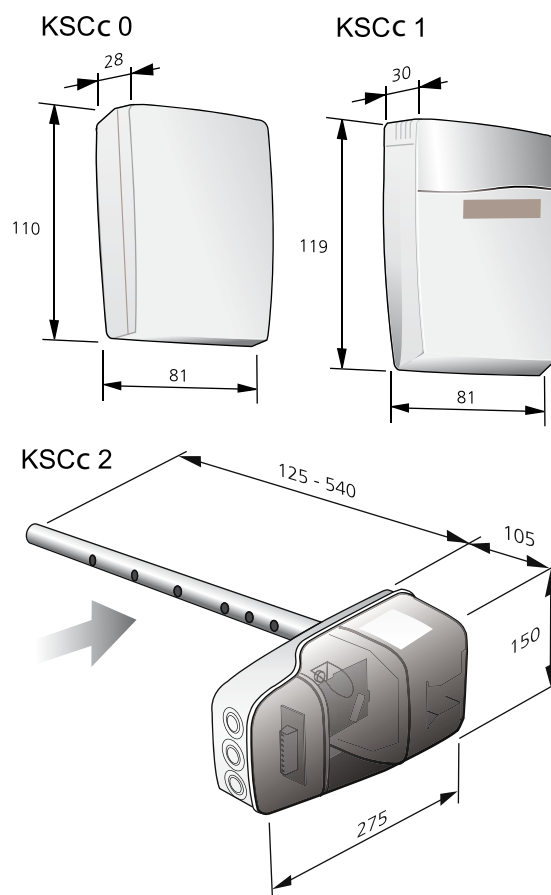


Diagram 3

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



Dimensions



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Figure 3. Dimensions.

Order key

Carbon dioxide sensor

KSCc -a

Model:

- 0 = room installation without display
- 1 = room installation
- 2 = duct installation

LONTALK® design specified in plain text.

Specification example

GI XX

Swegon's type KSCb carbon dioxide sensor with following functions:

- CO₂ measurement
- Temperature measurement
- Airing - heating - cooling regulation
- Integrated display
- LONTALK® communications

Type:

KSCc 1

xx items