



# Product Catalogue 2016



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# Vision

SenseAir's vision is to make a difference in people's lives through world leading gas sensing technology, aiming for a safer, healthier and more sustainable environment.

Sensors for life.

# Mission

SenseAir's mission is to bring value to our customers by providing reliable, accurate and cost-efficient gas sensing technology by focusing on LEAN thinking and quality.

Our leading edge R&D guarantees that our customers have access to state of the art products and solutions to meet their future.

# Our story

SenseAir® is a Swedish company and a world-leading manufacturer of cost effective IR gas measurements. With over 20 years of experience, SenseAir® has become a centre of excellence in the field of NDIR (non-dispersive infra-red) technology. We develop and produce affordable high precision gas sensors for high volume applications, maintenance-free throughout their life expectancy of at least 15 years, thanks to the built-in self-correcting ABC algorithm.

Continually improving and working with LEAN principles, our modern automated production has a capacity of 2 million sensors per year, offering a full traceability of all units.

100% of the sensors are tested to comply with performance criteria.

# Research & Development

SenseAir®'s gas sensors are complex products, composed of many carefully chosen details. 500 man-years of product development, designing and testing our products close to the scientific forefront, has made SenseAir® a world-leading manufacturer of high performance gas measurement solutions.

Around one third of the SenseAir® manpower is dedicated to highly scientific R&D as well as advanced Production Technique, always aiming to apply the newest technologies on the market to our products. The excellency of SenseAir's development resources is proven by the fact that these resources also are highly appreciated as consultants in external projects aiming at novel ultra-precise sensors. In addition to our specialized R&D resources, we have a wide range of qualified in-house lab equipment as well as access to external labs and instruments in co-operation with companies and universities.

SenseAir® holds more than 20 patents relating to its proprietary measurement technique.





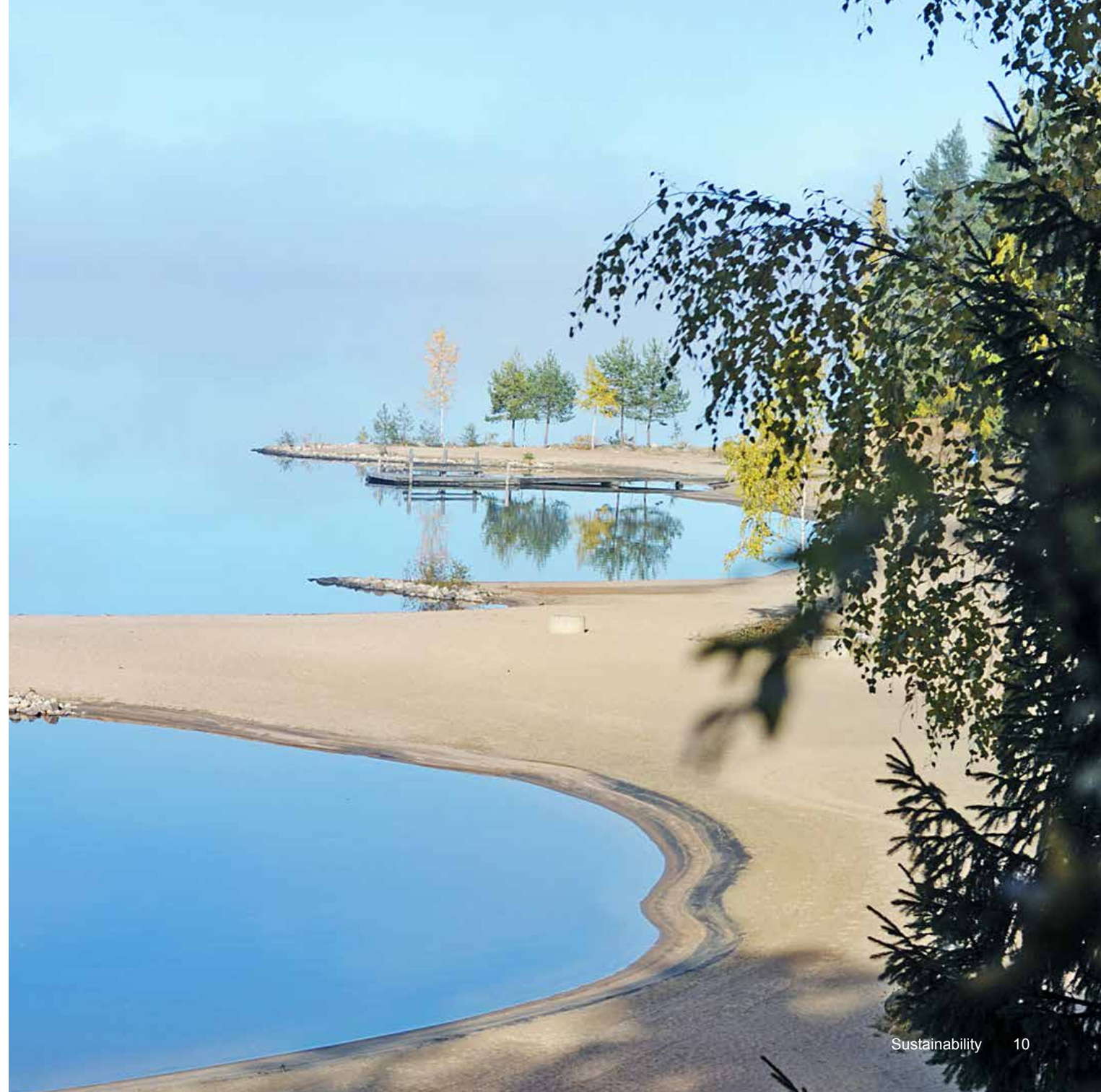


# Sustainability

SenseAir® develops and markets infrared gas measurements aiming for a safer, healthier and more sustainable environment, for example by lowering energy consumption and creating a safer working environment.

SenseAir®'s environmental policy strives to be a part of the creation of a sustainable society. We are well aware of the global environmental issues and our own potential to affect them both directly and indirectly. We therefore actively work with sustainability in our daily work as well as in a long-term perspective by continually developing and improving both our products and our production - ensuring it all contributes to energy savings and a better environment.

SenseAir's Environmental Management System is certified with ISO 14001:2004



# Ventilation Control

One of our major markets is building automation where our sensors control individual fans, dampers, valves, etc. A common application is controlling ventilation in rooms with varying numbers of people such as commercial buildings, offices, classrooms, and cinemas.

Since we exhale Carbon Dioxide, which can be dangerous in high concentrations and will affect your productivity level and decision making performance, good ventilation is required. Measuring the CO<sub>2</sub> level, in addition to complete air-handling and air-conditioning units, will let just the right amount of fresh air into the venue, helping us create a better indoor environment and energy savings.





# tSENSE™ Family

CO<sub>2</sub>, Temp and RH Transmitter with colour touch display

## Key Benefits:

- Maintenance free
- Three sensors in one housing
- Colour touch display
- PIN codes for access to display- and meter settings
- Flexibility: Shows CO<sub>2</sub> and/or Temperature and/or Humidity
- Improved housing design for effective measurement
- Five year warranty

tSENSE™ is an advanced and versatile 3-in-1 transmitter designed for installation in the air-conditioned zone. It measures CO<sub>2</sub> concentration, temperature and humidity in the ambient air accurately without need for additional compensation - true read. The data is transmitted to a BMS system, or stand-alone controller using industry standard output signals and communication protocols, such as BACNET.

tSENSE™ combines all the necessary elements for effective climate control in commercial office buildings, hospitals, hotels, schools and other facilities.





## tSENSE™



This versatile 3-in-1 transmitter combines all the necessary elements for effective climate control in commercial office buildings, hospitals, schools and other facilities. It measures CO<sub>2</sub> concentration, temperature and humidity in the ambient air accurately without need for additional compensation - true read.

### tSENSE™

<b>Product number:</b>	070-8-0001
<b>Measurement range:</b>	0 to 2000 ppm
<b>Power supply:</b>	12 V DC, 24 V AC/DC
<b>OUT1:</b>	CO <sub>2</sub> : 0 to 10 V DC, 0 to 2000 ppm CO <sub>2</sub>
<b>OUT2:</b>	Temperature: 0 to 10 V DC, 0 to 50°C
<b>OUT3:</b>	Relative Humidity: 0 to 10 V DC, 0 to 100% RH
<b>Accuracy (CO<sub>2</sub>):</b>	± 30 ppm ± 3 % of reading

## tSENSE™ VAV



tSENSE VAV is an advanced and versatile three-in-one controller designed for installation in the air-conditioned zone. The unit measures CO<sub>2</sub> concentration, temperature and humidity in the ambient air accurately without need for additional compensation – true read.

### tSENSE™ VAV

<b>Product number:</b>	070-8-0003
<b>Measurement range:</b>	0 to 2000 ppm
<b>Power supply:</b>	12 V DC, 24 V AC/DC
<b>OUT1:</b>	CO <sub>2</sub> : 600-900ppm
<b>OUT2:</b>	Temperature: 22-23°C
<b>OUT3:</b>	Relative Humidity: 75-85% RH
<b>Accuracy (CO<sub>2</sub>):</b>	CO <sub>2</sub> : 0 to 10 V DC, 0 to 2000 ppm CO <sub>2</sub>
	Temperature: 0 to 10 V DC, 0 to 50°C
	± 30 ppm ± 3 % of reading

### Standard Configuration

<b>Product number:</b>
<b>Measurement range:</b>
<b>Power supply:</b>
<b>OUT1:</b>
<b>OUT2:</b>
<b>OUT3:</b>
<b>Accuracy (CO<sub>2</sub>):</b>



# eSENSE™ Family

Economic CO<sub>2</sub> transmitter

## Key Benefits:

- Maintenance-free
- Available in different carbon dioxide measurement ranges and different housings
- Internal automatic self-diagnostics
- Cost-optimized for connection to DDC:s
- Five year warranty

eSENSE™ is an extremely cost-optimized sensor solution. By controlling the ventilation based on actual demand, it helps you decrease the energy consumption and have a healthy indoor climate in both residential and commercial buildings. eSENSE™ family is also available to other normal applications or environments for example in greenhouses.

eSENSE™ is a simple, low cost, state of the art, infrared and maintenance free carbon dioxide transmitter for installation in the climate zone or in the ventilation duct. It helps you save money by decreasing your energy consumption while creating a healthier indoor climate!

eSENSE™ measures the carbon dioxide concentration in the ambient air up to 2000 ppm and transforms the data into an analogue output.



## eSENSE™



eSENSE™ is a CO<sub>2</sub> transmitter for climate control and fits directly on top of European electrical junction box standards. The unit is available both with and without display for fixed installation in the climate zone and helps you to save money by decreasing your energy consumption while creating a healthier indoor air climate. Variations of this product can be found in the index.

### eSENSE™

050-8-0002  
 0 to 2000 ppm  
 24 V AC/DC  
 0 - 10 V DC CO<sub>2</sub>  
 2 - 10 V DC, 4 - 20mA CO<sub>2</sub>  
 0 to 50°C  
 ± 30 ppm ± 3 % of reading  
 Optional

## eSENSE™ II



eSENSE™ II is just as eSENSE™ a CO<sub>2</sub> transmitter for climate control. eSENSE II is adjusted to fit directly on top of US electrical junction box standards. The unit is available both with and without LCD display for fixed installation in the climate zone. Variations of this product can be found in the index.

### eSENSE™ II

050-8-0014  
 0 to 2000 ppm  
 24 V AC/DC  
 0 - 10 V DC CO<sub>2</sub>  
 2 - 10 V DC, 4 - 20mA CO<sub>2</sub>  
 0 to 50°C  
 ± 30 ppm ± 3 % of reading  
 Optional

## eSENSE™ DUCT



eSENSE™ Duct is an infrared and maintenance-free CO<sub>2</sub> transmitter, for climate control of buildings and other processes. eSENSE™ Duct is for installation in the ventilation duct. Variations of this product can be found in the index.

### eSENSE™ DUCT

050-8-0004  
 0 to 2000 ppm  
 24 V AC/DC  
 0 - 10 V DC CO<sub>2</sub>  
 2 - 10 V DC, 4 - 20mA CO<sub>2</sub>  
 0 to 50°C  
 ± 30 ppm ± 3 % of reading  
 Optional

### Standard Configuration

Product number  
 Measurement range  
 Power supply  
 OUT1 linear output  
 OUT2 linear output  
 Operation range  
 Accuracy  
 Display



## eSENSE™ IND



eSENSE™ Ind is an infrared and maintenance-free CO<sub>2</sub> transmitter, for climate control of buildings and other processes. eSENSE™ Ind is a wallmounted transmitter with protection class IP54 and it's applicable in most large spaces and is well suited for example in industry environment. Variations of this product can be found in the index.

### eSENSE™ IND

Product number	050-8-0032
Measurement range	0-2000 ppm
Power supply	24 V AC/DC
OUT1 linear output	0-10 V DC CO <sub>2</sub>
OUT2 linear output	2-10 V DC, 4-20mA CO <sub>2</sub>
Operation range	0-50°C
Accuracy	± 30 ppm ± 3 % of reading
Display	Optional

## eSENSE™ Slim



eSENSE™ Slim is used to measure indoor air carbon dioxide concentration. This product is an ultra-compact transmitter intended for factory mounting for both wall and duct applications with the protection class IP50. A 300 mm long cable connected to the PCB makes it possible to place the sensor where mounting is difficult.

### eSENSE™ Slim

Product number	050-8-0003
Measurement range	0-2000 ppm
Power supply	24 V AC/DC
OUT1 linear output	0-10 V DC CO <sub>2</sub>
OUT2 linear output	-
Operation range	0-50°C
Accuracy	± 30 ppm ± 3 % of reading
Display	No

## eSENSE™ FAI



eSENSE™ FAI “Fresh Air Indicator” is an infrared and maintenance-free carbon dioxide alarm for installation in areas where the carbon dioxide levels need to be monitored, such as classrooms and offices. The product measures the carbon dioxide concentration in ambient air and alarms with sound and light when the levels exceed defined levels.

### eSENSE™ FAI

Product number	050-8-0061
Measurement range	0 to 2000 ppm
Power supply	24 V AC/DC
OUT1 linear output	0-10 V DC CO <sub>2</sub>
OUT2 linear output	-
Operation range	0-50°C
Accuracy	± 30 ppm ± 3 % of reading
Display	Yes

### Standard Configuration

Product number	
Measurement range	
Power supply	
OUT1 linear output	
OUT2 linear output	
Operation range	
Accuracy	
Display	

# aSENSE™ Family

Economic CO<sub>2</sub> transmitter

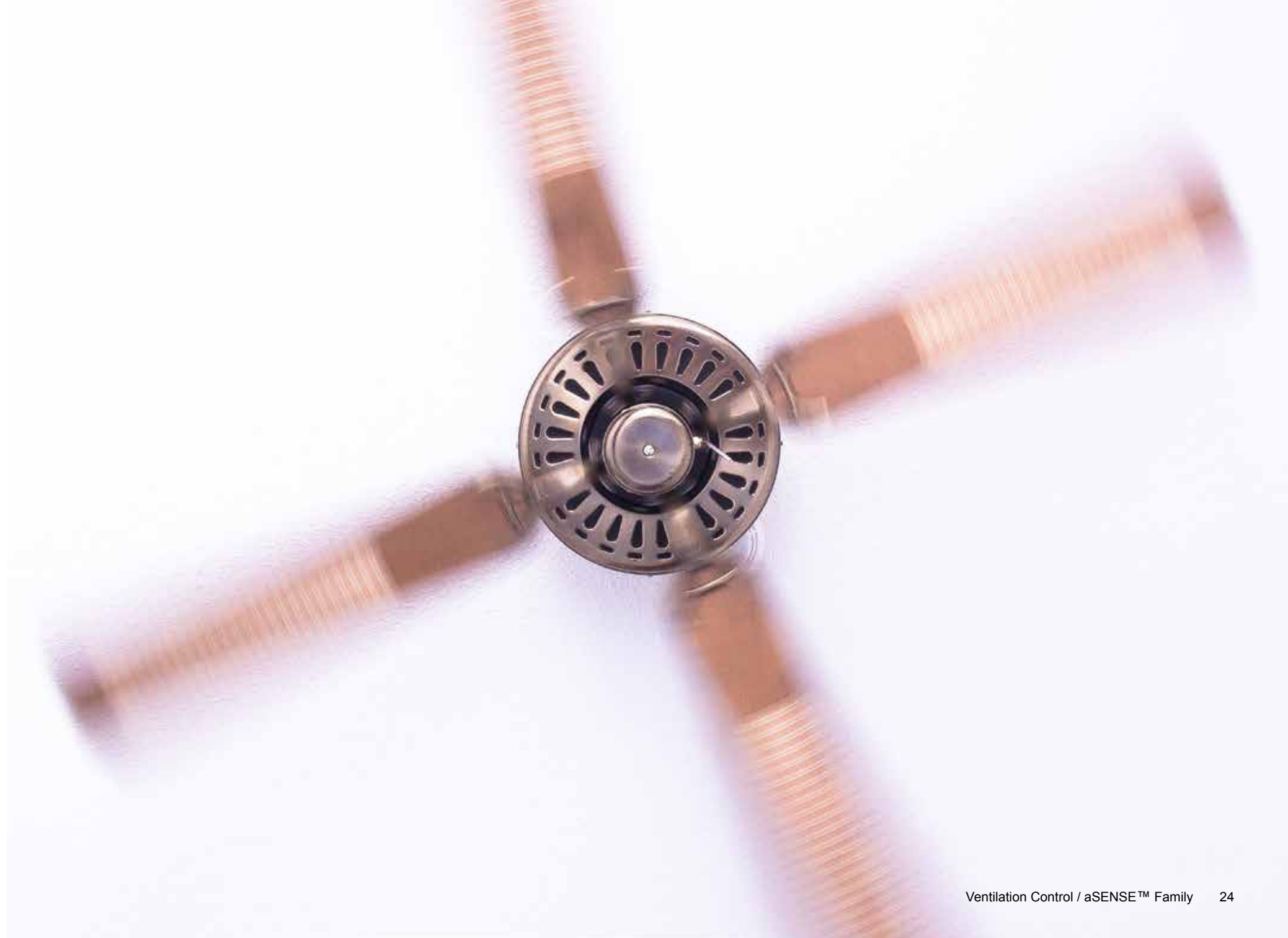
## Key Benefits:

- Maintenance-free
- Contributes to lower energy costs
- Available in different carbon dioxide measurement ranges and different housings
- RS485 communication as option
- Five year warranty

aSENSE™ is an advanced transmitter for installation in the climate zone. It measures both CO<sub>2</sub> concentration and temperature in the ambient air. The data is transmitted to a BMS system or controller and can be configured with UIP Software. aSENSE™ is a key component for climate control of buildings and other processes.

The transmitter is flexible and suits many different ventilation strategies. It is also a cost-efficient gas alarm sensor for spaces where carbon dioxide gas is a potential danger.

aSENSE™ is designed to control ventilation by transmitting the measured carbon dioxide and temperature value to the system's Master or DDC. A common application is controlling ventilation in rooms with varying numbers of people such as offices, classrooms, and cinemas. The ventilation control is based on temperature and CO<sub>2</sub> measurements and helps to save energy and create a healthy indoor environment.



## aSENSE™



aSENSE™ is an advanced transmitter for installation in the climate zone. It measures both CO<sub>2</sub> concentration and temperature. The data is transmitted to a BMS system or controller and can be configured with UIP Software. The unit is prepared for Modbus. Variations of this product can be found in the index.

## aSENSE™ DUCT



aSENSE™ Duct is an infrared and maintenance-free carbon dioxide transmitter for installation in the ventilation duct. The unit has an industrial housing (protection class IP65) with duct probe. The unit is prepared for Modbus. Variations of this product can be found in the index.

## aSENSE™ VAV



aSENSE™ VAV is a stand alone controller that measures CO<sub>2</sub> concentration and temperature in ambient air. It also has a terminal for extra functions for example manual override and it's prepared for Modbus. The unit is a key component for climate control of rooms with a varying number of people. Variations of this product can be found in the index.

### Standard Configuration

### aSENSE™

### aSENSE™ DUCT

### aSENSE™ VAV

Standard Configuration	aSENSE™	aSENSE™ DUCT	aSENSE™ VAV
<b>Product number</b>	045-8-0001	045-8-0019	040-8-0016
<b>Measurement range</b>	0-2000 ppm	0-2000 ppm	0-2000 ppm
<b>Power supply</b>	24 V AC/DC	24 V AC/DC	24 V AC/DC
<b>OUT1 linear output</b>	0-10 V DC CO <sub>2</sub>	0-10 V DC CO <sub>2</sub>	0-10 V DC CO <sub>2</sub>
<b>OUT2 linear output</b>	2-10 V DC, 4-20mA CO <sub>2</sub>	2-10 V DC, 4-20mA CO <sub>2</sub>	2-10 V DC, 4-20 mA CO <sub>2</sub>
<b>Out 3 relay</b>	-	-	Closed >600 ppm, open < 500 ppm CO <sub>2</sub>
<b>OUT4 linear conversion</b>	-	-	0-10 V DC or 0/4-20 mA, 20-18°C
<b>Operation range</b>	0-50°C	0-50°C	0-50°C
<b>Accuracy</b>	± 30 ppm ± 3 % of reading	± 30 ppm ± 3 % of reading	± 30 ppm ± 3 % of reading
<b>Display</b>	Optional	Optional	Yes



## aSENSE™ VAV DUCT



aSENSE™ VAV Duct is a stand alone controller with built-in sensors that measure CO<sub>2</sub> and temperature for installation in the ventilation duct. aSENSE™ VAV Duct has an industrial housing and it's also prepared for Modbus. Variations of this product can be found in the index.

### aSENSE™ VAV DUCT

Product number	045-8-0019
Measurement range	0-2000 ppm
Power supply	24 V AC/DC
OUT1 linear output	0/2-10 V DC or 0/4-20 mA CO <sub>2</sub> , 600-900 ppm CO <sub>2</sub> , 23-24°C
OUT2 linear output	0/2-10 V DC, 600-900 ppm CO <sub>2</sub>
Out 3 relay	Closed >600 ppm, open <500 ppm CO <sub>2</sub>
OUT4 linear conversion	0-10 V DC or 0/4-20 mA CO <sub>2</sub> , 20-18°C
Operation range	0-50°C
Accuracy	± 30 ppm ± 3 % of reading
Display	Yes

## aSENSE™ MIII Disp



aSENSE™ MIII Disp is a controller with built-in sensors to monitor carbon dioxide and carbon monoxide simultaneously. With these parameters, the programmable unit can for example control ventilation rates and generate alarm signals. The sensor can be configured with the UIP Software.

### aSENSE™ MIII DISP

Product number	040-8-0064
Measurement range	0-2000 ppm
Power supply	24 V AC/DC
OUT1 linear output	0-10 V DC CO
OUT2 linear output	0-10 V DC CO <sub>2</sub>
Out 3 relay	Closed <30 ppm CO, <1400 ppm CO <sub>2</sub> , open >35 ppm CO >1500 ppm CO <sub>2</sub>
OUT4 linear conversion	Open collector, error detection
Operation range	0 - 50°C
Accuracy	± 30 ppm CO <sub>2</sub> , ± 3% CO <sub>2</sub> ± 10 ppm CO of reading
Display	Yes

### Standard Configuration

Product number	045-8-0019
Measurement range	0-2000 ppm
Power supply	24 V AC/DC
OUT1 linear output	0/2-10 V DC or 0/4-20 mA CO <sub>2</sub> , 600-900 ppm CO <sub>2</sub> , 23-24°C
OUT2 linear output	0/2-10 V DC, 600-900 ppm CO <sub>2</sub>
Out 3 relay	Closed >600 ppm, open <500 ppm CO <sub>2</sub>
OUT4 linear conversion	0-10 V DC or 0/4-20 mA CO <sub>2</sub> , 20-18°C
Operation range	0-50°C
Accuracy	± 30 ppm ± 3 % of reading
Display	Yes



# Portable Monitoring

In today's health- and energy-conscious environment, measuring CO<sub>2</sub> is important for safety and comfort, energy savings, and to warn about potentially toxic CO<sub>2</sub> and CO levels. SenseAir offers a full line of products for this application in, for example, public garages, buildings, truck terminals, tunnels, and mines.





# pSENSE™ Family

Portable CO<sub>2</sub> transmitter and Temperature

## Key Benefits:

- State-of-the-art NDIR technology to measure Carbon Dioxide gas in parts-per-million (ppm)
- Data output RS232
- Displays the current levels on a large LCD
- Displays TWA (8hours) STEL (15 minutes) Min, Max and average values
- Internal automatic self-diagnostic function
- Audible alarm
- Easy to calibrate

pSENSE™ is a low cost flexible and easy to use hand-held, instrument designed to measure the carbon dioxide concentration and temperature in surrounding air. With a battery capacity covering more than 24 hours, the instrument works extremely well for diagnosing ventilation using carbon dioxide as the surrogate ventilation index.

The instrument works perfect for measuring the indoor air quality parameters CO<sub>2</sub>, Temp and Carbon dioxide has been acknowledged as a good indicator that adequate “fresh” outside air is being supplied to the occupants for acceptable indoor air quality. Adequate ventilation reduces temporary sickness, downtime and lost productivity. The pSENSE is also ideal for measuring Carbon Dioxide concentration in incubators, greenhouses, mushroom farms, etc., where correct levels are essential for the process outcome.





## pSENSE™



pSENSE™ is a flexible and hand-held instrument, measuring the CO<sub>2</sub> concentration and temperature. The model is also ideal for measuring CO<sub>2</sub> concentration in incubators, greenhouses, mushroom farms etc. where correct levels are essential for the process outcome. Audible alarm, Max/Min Average as well as TWA and STEL measurements are possible.

## pSENSE™ II



pSENSE II™ is a hand-held datalogger that displays and records RH, temperature, CO<sub>2</sub> and calculated parameters such as dew point and wet-bulb temperature. It can be run in different modes aside displaying active measurement; such as MIN/MAX/AVG review mode and have multiple logging related modes. Through supplied USB cable, logs can easily be analysed on PC.

## pSENSE™ RH



pSENSE™ RH works perfectly for measuring the indoor air quality parameters CO<sub>2</sub>, temperature and RH%. Audible alarm, Max/Min Average as well as TWA and STEL measurements are possible. The model works extremely well for diagnosing ventilation using carbon dioxide as the surrogate ventilation index. It is also simple to log data for a longer period of time.

### Standard Configuration

#### Product number:

#### Measurement range CO<sub>2</sub>:

#### Measurement range Relative Humidity

#### Measurement range Temperature

#### Power supply

#### Battery life expectancy

#### Response time

#### Dimensions

#### Accuracy (CO<sub>2</sub>):

### pSENSE™

00-0-0015

0 to 2000 ppm (extended 10 000 ppm)

-

0 to 50°C

4xAA type (UM-3)

> 24 hours

About 30 seconds

209 mm \* 58 mm \* 70 mm

± 75 ppm ± 5 % of reading

### pSENSE™ II

00-0-0030

0 to 5000 ppm

0.1 to 99.5%

-20 to 60°C

4 x AA type (UM-3) / optional AC adapter AC1214

> 50 hours

<10 sec @ 30 cc/min. flow, <3 min diffusion time

234 mm \* 78 mm \* x 42 mm

± 30 ppm ± 3 % of reading

### pSENSE™ RH

00-0-0016

0 to 5000 ppm

10 to 90%

-

4xAA type (UM-3)

> 10 hours

About 30 seconds

209 mm \* 58 mm \* 70 mm

± 30 ppm ± 3 % of reading

# Agriculture

Carbon Dioxide is necessary to all forms of life. It is a vital parameter in the production of all kinds of plant species, bacteria, poultry etc. CO<sub>2</sub> sensors can be used to increase process yield and efficiencies in many bio-related processes, such as in greenhouses, mushroom-farming, food transportation/storage, chicken hatcheries, incubators and dairying.





# Green House Family

CO<sub>2</sub> transmitter and Temperature

## Key Benefits:

- NDIR technology to measure Carbon Dioxide gas
- Membrane covered sample chamber resulting in a stable, reliable and highly accurate carbon dioxide sensor
- Reliable and accurate builtin NTC thermistor for measuring temperature
- Fully coated PCB together with a special filter equipped housing makes products perfectly resistant towards dust and humidity
- Optional RS485 digital interface to PC and advanced control network systems

A natural application for Green House Family is to supervise and/or control the climate in e. g. green houses, mushroom farms, agricultural, horticultural and medical incubators based on Carbon Dioxide concentration and temperature. SenseAir Green House™ Family is especially suited for installation in these and similar environments since it measures both temperature & carbon dioxide concentration in one single unit. Both are very important parameters when trying to achieve an optimum growth.





## aSENSE™ GH



aSENSE™ GH “Green House” is a transmitter for installation in the climate zone. The special coated PCB and extra dust/ water protection filter make aSENSE™ GH suited for all kinds of greenhouses, incubators and similar environments. The unit measures both temperature and carbon dioxide concentration. Variations of this product can be found in the index.

### Standard Configuration

Product number	045-8-0063
Measurement range	0-2000 ppm
Power supply	24 V AC/DC
OUT1 linear output	0/2 to 10 V DC or 0/4 to 20 mA (CO <sub>2</sub> )
OUT2 linear output	0/2 to 10 V DC or 0/4 to 20 mA (°C)
OUT3 relay	Closed < 900 ppm, Open > 1000 ppm (CO <sub>2</sub> )
Operation range	0-50°C
Accuracy	± 30 ppm ± 3 % of reading
Display	yes





# OEM Modules

Our OEM modules are cost-optimized sensors for high volume applications intended to be integrated into our customers' own products. They can easily be adjusted to comply with differing customer requirements. The only restriction for what OEM modules can be used for is the creativity and inventiveness of the customer.



# S8™ Platform

A very small, versatile and mass-producible CO<sub>2</sub> transmitter module

## Key Benefits:

- Maintenance-free with long expected life-time, more than 15 years
- Automatic and internal self-diagnostics
- Environmentally resilient with SenseAir-patented EQC, multilayer optical-coating
- Available in background ppm-ranges (default up to 2000ppmvol. and extended up to 10'000ppmvol.)
- Available in elevated alarm-ranges (default up to 2%vol. and extended up to 5%vol.)
- Available in low-power versions for battery applications
- Available in LNE-certified safety-switch versions, with availability of additional alarm outputs and recalibration pins
- World's smallest and award-winning NDIR module upon release

SenseAir® S8™ is due to tiny size and design for manufacturability an extremely cost-optimized and easily fitted transmitter solution for CO<sub>2</sub> measurements. Balancing the key aspects of utility, quality, accuracy, operational lifetime and cost.

Connect it to any host controller or system by UART, communicating digitally by Modbus over serial line, or sample its measurement by the analogue PWM signal output. SenseAir® S8™ samples CO<sub>2</sub> from ambient air by diffusion through a particle filter membrane, but by its small size it can also be integrated in duct channels and other areas where there is a minimum flow rate of air, thermally or mechanically induced. It is internally calibrated to compensate for a wide operational temperature range, 0°C to 50°C non-condensing environment.





## S8 Commercial



SenseAir® S8 Commercial is the ideal choice for indoor ventilation control and CO<sub>2</sub> monitoring in commercial HVAC applications. The sensor is based on modern infrared technology (NDIR) which measures CO<sub>2</sub> levels with a very high accuracy. The SenseAir® S8 is designed for easy integration.

## S8 Alarm



SenseAir® S8 Alarm is a miniature safety switch that can be used in control and alarm applications. The sensor can be integrated in a wide range of different alarm applications where you want to detect CO<sub>2</sub>, such as leakage detection.

## S8 Residential



SenseAir® S8 Residential is the ideal choice for indoor ventilation control and CO<sub>2</sub> monitoring in residential applications. The sensor is based on modern infrared technology (NDIR). The SenseAir® S8 Residential is designed for easy integration.

### Standard Configuration

**Product Number:**

**Measurement range:**

**Power supply:**

**Alarm output (open collector):**

**PWM output:**

**Communication:**

**Operation temperature:**

**Dimensions (H x W x D):**

**Accuracy:**

### SenseAir® S8 Commercial

004-0-0010  
 400 to 2000 ppm (0 to 10 000 ppm extended)  
 4.5 V to 5.25 V DC  
 Open > 1000 ppm, Closed < 800 ppm  
 0 to 100 % duty cycle for 0 to 2000 ppm  
 UART (Modbus)  
 0 to 50°C  
 8.5 x 33.5 x 20 mm  
 ± 30 ppm ± 3% of reading

### SenseAir® S8 Alarm

004-0-0050  
 0.04 to 2% vol (CO<sub>2</sub>)  
 4.5 V to 5.25 V DC  
 Open > 8500 ppm, Closed < 6500 ppm  
 0 to 100 % duty cycle for 0 to 20 000 ppm  
 UART (Modbus)  
 0 to 50°C  
 8.5 x 33.5 x 20 mm  
 ± 0.02 %<sub>vol</sub> CO<sub>2</sub> ± 3% of reading

### SenseAir® S8 Residential

004-0-0013  
 400 to 2000 ppm (0 to 10 000 ppm extended)  
 4.5 V to 5.25 V DC  
 Open > 1000 ppm, Closed < 800 ppm  
 0 to 100 % duty cycle for 0 to 2000 ppm  
 UART (Modbus)  
 0 to 50°C  
 8.5 x 33.5 x 20 mm  
 ± 70 ppm ± 3% of reading at 5 to 30°C, 20-70%RH

## S8 4B



SenseAir® S8 4B is a miniature low power LNE approved safety switch. SenseAir® S8 4B main application area is to serve as a CO<sub>2</sub> safety switch when built into equipment such as kerosene heaters and other equipment generating potential hazardous levels of CO<sub>2</sub> gas. Because of low current consumption the sensor is suitable for battery applications and has an average current consumption of 2 mA.

### SenseAir® S8 4B

Product Number:	004-0-0061
Measurement range:	0.04 to 3.2% vol (CO <sub>2</sub> )
Power supply:	4.5 to 7 V DC
Alarm output (open collector):	Open > 8000 ppm, Closed < 6500 ppm
PWM output:	-
Communication:	-
Operation temperature:	0 to 50°C
Dimensions (H x W x D):	8.5 x 60.5 x 20 mm
Accuracy:	± 1000 ppm (at alarm points between 7000 and 9000 ppm)

## S8 LP



SenseAir® S8 LP is a miniature low power CO<sub>2</sub> sensor module developed for applications where both energy consumption and accuracy are critical factors. With an average power consumption of 18 mA and an accuracy of ± 40 ppm and ± 3% of reading the SenseAir® S8 LP is the natural choice for developers who demand the best of two worlds.

### SenseAir® S8 LP

Product Number:	004-0-0053
Measurement range:	400 to 2000 ppm (0 to 10 000 ppm extended)
Power supply:	4 V to 5.25 V DC
Alarm output (open collector):	Open > 1000 ppm, Closed < 800 ppm
PWM output:	0 to 100 % duty cycle for 0 to 2000 ppm
Communication:	UART (Modbus)
Operation temperature:	0 to 50°C
Dimensions (H x W x D):	8.5 x 33.5 x 20 mm
Accuracy:	± 40 ppm ± 3% of reading

### Standard Configuration

Product Number:	
Measurement range:	
Power supply:	
Alarm output (open collector):	
PWM output:	
Communication:	
Operation temperature:	
Dimensions (H x W x D):	
Accuracy:	





# K30™ Platform

A very versatile and flexible mass-producible CO<sub>2</sub> transmitter module

## Key Benefits:

- Maintenance-free with long expected life-time, more than 15 years
- Automatic and internal self-diagnostics
- Environmentally resilient with SenseAir-patented EQC, multilayer optical-coating
- Available in many different concentration ranges from background ppm-ranges up to 3%vol (or higher by extended range)
- Several output and communication options

SenseAir® K30™ platform is due to size and design for manufacturability a cost-optimized and easily fitted transmitter solution for CO<sub>2</sub> measurements - balancing the key aspects of utility, quality, accuracy, operational lifetime and cost.

Connect it to any host controller or system by UART or I2C communicating digitally by Modbus over serial line, or sample its measurement by the analogue voltage signal outputs.

The K30™ platform samples CO<sub>2</sub> from ambient air by diffusion through a particle filter membrane. It is internally calibrated to compensate for a wide operational temperature range, 0°C to 50°C non-condensing environment.





## CO<sub>2</sub> Engine® K30



CO<sub>2</sub> Engine® K30 can be customized for a variety of sensing and control applications. The platform is designed to be an OEM module for built-in applications in a host apparatus. K30 is a flexible product with 2 analog outputs and 2 digital outputs that can be configured with SADK or other custom software.

## CO<sub>2</sub> Engine® K30 3%



CO<sub>2</sub> Engine® K30 3% can be customized for a variety of sensing and control applications. The platform is designed to be an OEM module for built-in applications in a host apparatus. K30 is a flexible product and can be configured with SADK or other custom software.

## CO<sub>2</sub> Engine® K30 FR



CO<sub>2</sub> Engine® K30 FR is a high performance CO<sub>2</sub> sensor module optimized for fast response time. The sample cell is well protected by a particle filter and is designed for fast diffusion without any need for external pump. In addition, there is a tube inlet to be able to feed on-line test gas through the sensor.

### Standard Configuration

### CO<sub>2</sub> Engine® K30

### CO<sub>2</sub> Engine® K30 3%

### CO<sub>2</sub> Engine® K30 FR

**Product Number:**

030-8-0006

030-7-0001

030-8-0010

**Measurement range:**

0 to 5000 ppm

0 to 3%<sub>vol</sub>

0 to 5000 ppm

**Power supply :**

4.5 to 14.0 V DC

4.5 to 14.0 V DC

4.5 to 14.0 V DC

**OUT1:**

Linear output: 0 to 4 V DC, 0 to 2000 ppm

1 to 4 V DC = 0 to 2%<sub>vol</sub> (extended range up to 4%<sub>vol</sub>)

Linear output: 0 to 4 V DC, 0 to 2000 ppm

**OUT2:**

Linear output: 1 to 5 V DC, 0 to 2000 ppm

1 to 4 V DC = 0 to 2%<sub>vol</sub> (extended range up to 4%<sub>vol</sub>)

Linear output: 1 to 5 V DC, 0 to 2000 ppm

**OUT3:**

Linear output: High > 800 ppm, low < 700 ppm

Digital output: High > 800 ppm, low < 700 ppm

**OUT4:**

Linear output: High > 1000 ppm, Low < 900 ppm

Digital output: High > 1000 ppm, Low < 900 ppm

**Communication:**

I<sup>2</sup>C/UART (Modbus)

I<sup>2</sup>C/UART (Modbus)

I<sup>2</sup>C/UART (Modbus)

**Operation temperature:**

0 to 50°C

0 to 50°C

0 to 50°C

**Dimensions (H x W x D):**

14 x 57 x 51 mm

14 x 57 x 51 mm

14 x 57 x 51 mm

**Power Consumption:**

< 40 mA

< 40 mA

70 mA (average)

**Accuracy:**

± 30 ppm ± 3 %

± 300 ppm ± 3 % (extended range up to 4%<sub>vol</sub>)

± 30 ppm ± 3 %

# K33™ Platform

The most flexible CO<sub>2</sub> transmitter module in our range of OEM modules.

## Key Benefits:

- Temp and humidity measurements as options
- Maintenance-free with long expected life-time, more than 15 years
- Automatic and internal self-diagnostics
- Environmentally resilient with SenseAir-patented EQC, multilayer optical-coating
- Available in many different concentration ranges from background ppm-ranges up to 30%<sub>vol</sub>
- Several output and communication options

SenseAir® K33™ platform is due to size and design for manufacturability a cost-optimized and easily fitted transmitter solution for CO<sub>2</sub> temp and humidity measurements - balancing the key aspects of utility, quality, accuracy, operational lifetime and cost.

Connect it to any host controller or system by UART or I2C communicating digitally by Modbus over serial line.

The K33™ platform samples CO<sub>2</sub> from ambient air by diffusion through a particle filter membrane. It is internally calibrated to compensate for a wide operational temperature range, 0°C to 50°C non-condensing environment.



## CO<sub>2</sub> Engine® LP



CO<sub>2</sub> Engine® LP is a low-power module that fits in any application where power consumption is important to keep at a minimum without sacrificing performance. The platform is designed for integration into host apparatus, such as battery operated products. The module also measures temperature, and humidity is an option.

### CO<sub>2</sub> Engine® LP

**Product Number:** 033-8-0009

**Measurement range:** 0 to 5000 ppm

**Power supply:** 5 to 12 V DC

**Communication:** I<sup>2</sup>C/UART (Modbus)

**Operation temperature:** 0 to 50°C

**Dimensions (H x W x D):** 14 x 57 x 51 mm

**Power Consumption:**  
 1.5 mA (30 sec measurement interval)  
 0.74 mA down to 3.5 mA (60 sec interval)  
 86 µA (15 min measurement interval)  
 52 µA (60 min measurement interval)

**Accuracy:** ± 30 ppm ± 3 %

## CO<sub>2</sub> Engine® BLG



CO<sub>2</sub> Engine® BLG is designed to measure and store records of environmental parameters such as CO<sub>2</sub>, RH and temperature. The sensor can be used in a wide range of applications; in food transportation, storage, incubators and other high concentration range applications.

### CO<sub>2</sub> Engine® BLG

**Product Number:** 033-9-0015

**Measurement range:** 0 to 30% <sub>vol</sub> (CO<sub>2</sub>), 0 to 100% (RH), -40 to 60 (°C)

**Power supply:** 4.5 to 12 V DC

**Communication:** I<sup>2</sup>C/UART (Modbus)

**Operation temperature:** 0 to 50°C for CO<sub>2</sub>

**Dimensions (H x W x D):** 14 x 57 x 51 mm

**Power Consumption:** < 250 uA (60 min measurement interval)

**Accuracy:** ± 0,2% <sub>vol</sub> ± 3% of reading

## CO<sub>2</sub> Engine® ELG



CO<sub>2</sub> Engine® ELG is suitable for low power applications as the unit can be put into sleep-mode between measurements. The sensor measures and stores records of environmental parameters such as CO<sub>2</sub>, RH and temperature.

### CO<sub>2</sub> Engine® ELG

**Product Number:** 033-8-0007

**Measurement range:** 0 to 5000 ppm (CO<sub>2</sub>), 0 to 100% (RH), - 40 to 60 (°C)

**Power supply:** 4.5 to 12 V DC

**Communication:** I<sup>2</sup>C/UART (Modbus)

**Operation temperature:** 0 to 50°C for CO<sub>2</sub>

**Dimensions (H x W x D):** 14 x 57 x 51 mm

**Power Consumption:** < 250 uA (60 min measurement interval)

**Accuracy:** ± 30 ppm ± 3% of reading

### Standard Configuration

**Product Number:**

**Measurement range:**

**Power supply:**

**Communication:**

**Operation temperature:**

**Dimensions (H x W x D):**

**Power Consumption:**

**Accuracy:**



## CO<sub>2</sub> Engine® ICB



The CO<sub>2</sub> Engine® ICB platform can be customized for a variety of sensing, control and alarm applications. This platform is designed to be an OEM module for built-in applications in a host apparatus.

### Standard Configuration

<b>Product Number:</b>	033-9-0001
<b>Measurement range:</b>	0 to 30% vol (CO <sub>2</sub> )
<b>Power supply :</b>	4.5 to 12.0 V DC
<b>OUT1:</b>	PWM: 0 to 20% vol (CO <sub>2</sub> )
<b>OUT2:</b>	0 to 5 V DC, 0 to 20% vol (CO <sub>2</sub> )
<b>Communication:</b>	I <sup>2</sup> C/UART (Modbus)
<b>Operation temperature:</b>	0 to 50°C
<b>Dimensions (H x W x D):</b>	14 x 57 x 51 mm
<b>Power Consumption:</b>	< 40 mA
<b>Accuracy:</b>	± 0,2% vol ± 3% of reading



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# Contact us

For more information about our products and services, you can reach us at the following contact information:



## Headquarter and Production:

**SenseAir® AB Europe**  
 Stationsgatan 12  
 Box 96  
 820 60 Delsbo  
 Sweden

Phone: +46 (0) 653 71 77 70  
 E-mail: [info@senseair.com](mailto:info@senseair.com)  
 Web site: [senseair.com](http://senseair.com)

## Sales offices:

**SenseAir® North America Inc.**  
 29030 SW Town Center Loop East  
 Suite 202 - #169  
 Wilsonville, OR 97070  
 USA

Phone: +1 (520) 349 7686  
 E-mail: [infoamerica@senseair.com](mailto:infoamerica@senseair.com)  
 Web site: [senseair.com](http://senseair.com)

**SenseAir® Asia**  
 SenseAir® Chengdu Gas Sensors Co. Ltd  
 First floor of No.8, Xingke South Road  
 Jiniu High-tech, industrial park  
 Post code 610036, Chengdu  
 China

Phone: +86 (0) 28 87592885  
 E-mail: [info@senseair.asia](mailto:info@senseair.asia)  
 Web site: [senseair.asia](http://senseair.asia)



