aSENSE[™] Family

CO₂ and Temperature Transmitters











aSENSE™ is an advanced transmitter for installation in the climate zone. It measures both CO₂ 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.

STANDARD SPECIFICATION*

Measured gas Carbon dioxide (CO₂)

Operating Principle Non-dispersive infrared (NDIR)

Measurement range 0 - 2000ppm*

OUT1 linear output 0/2 - 10VDC, 0 - 2000ppm CO_2

0/4 - 20mA , 0 - 2000ppm CO₂

OUT2 linear output 0/2 - 10VDC, 0 - 50°C

0/4 - 20mA, 0 - 50°C

Accuracy ±30ppm ±3% of reading

Dimensions 120 x 82 x 30mm

Life Expectancy >15years

Operation temperature range 0 - 50°C

Operation humidity range 0 - 85%RH (non-condensing)

Power supply 24 V AC/DC Power consumption <1W average

Communication UART

(prepaired for Modbus)

APPLICATIONS

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 CO₂ measurements and helps to save energy and create a healthy indoor environment.

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

^{*} Available in different carbon dioxide measurement ranges and different housings.

aSENSE[™] carbon dioxide transmitter Technical Specification

General Performance:

Storage Temperature Range-40 - 70°C (display model Disp: -20 - 50°C)

Sensor Life Expectancy>15years

Maintenance Intervalno maintenance required 1

Warm-up Time>1min. (@ full specs >5min.)

Conformance with standards...... EMC 2004/108/EC directive, EN 61326-1:2006, Class B equipment, Table 1 - Basic

immunity test requirements RoHS directive 2011/65/EU

Operating EnvironmentResidential, commercial, industrial spaces. 3

Electrical / Mechanical:

Power Input24VAC ±20%, 50/60Hz (half-wave rectifier input)

CO₂ Measurement:⁴

Sensing Method......non-dispersive infrared (NDIR) waveguide technology with ABC

automatic background calibration algorithm

Sampling Method......diffusion

Measurement Range 0 - 2000ppm_{vol}

Accuracy^{1,5}±30ppm ±3% of measured value

Pressure Dependence+1.6% reading per kPa deviation from normal pressure, 100kPa

Temperature Measurement:4

Operating principle......Negative Temperature Coefficient (NTC) resistor

Measurement range.....-20 - 60°C

Accuracy ⁶/ Digital resolution±1°C (TBD) / 0.1°C on display, 0.01°C by UART

Linear Signal Outputs:4,7

OUT1......Voltage or mA current loop output, selectable by jumper

Linear Conversion Range, voltage 0/2 - 10VDC for 0 - 2000ppm_{vol} Linear Conversion Range, mA current .. 0/4 - 20mA for 0 - 2000ppmvol-

OUT2......Voltage or mA current loop output, selectable by jumper

Linear Conversion Range, voltage 0/2 - 10VDC for 0 - 50°C

Linear Conversion Range, mA current . 0/4 - 20mA for 0 - 50°C

Voltage outputs:

D/A Conversion Accuracy±2% of reading ±20mV

D/A Resolution......10mV

Electrical Characteristics......Rout <100 Ω RLOAD >5k Ω ,

Current loop output:

D/A Conversion Accuracy±2% of reading ±0.3mA

Electrical Characteristics.....RLOAD <500Ω





aSENSE[™] Duct Disp aSENSE[™] Duct Dim: 152 x 85 x 47mm

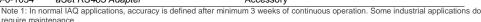
Probe length: 245mm

Dim:152 x 85 x 47mm

aSENSE™ Family

Available in different carbon dioxide measurement ranges and different housings

Art.no.	Product	Additional features
045-8-0001	aSENSE™	No display
045-8-0002	aSENSE™ Disp	Display
045-8-0003	aSENSE™ RL	No display, relay
045-8-0025	aSENSE™ Disp RL	Display, relay
045-8-0019	aSENSE™ Duct	No display, protection class IP65 ⁸
045-8-0031	aSENSE™ Duct Disp	Display, protection class IP65 ⁸
045-8-0032	aSENSE™ Ind	No display, suits industry environment
045-8-0036	aSENSE™ Ind Disp	Display, suits industry environment
045-8-0028	aSENSE™ Ind Disp RL	Display, relay, suits industry environment
00-0-1034	aSet RS485 Adapter	Accessory



Note 2: Lower operation temperature range can be reached by adding a box heater assembly

Note 3: SO₂ enriched environments are excluded.

Note 4: Different options exist and can be customized depending on the application. Please, contact SenseAir for further information!

Note 5: Repeatability is included. Uncertainty of calibration gases (±2% currently) is added to the specified accuracy.

Note 6: Valid only for units configured in voltage output mode.

Note 7: During power up, OUT1 and OUT2 are defined to be low. Exact value depends on many factors including temperature.

Note 8: For connecting cables with the diameter 5 - 9 mm.







aSENSE[™] Disp aSENSE[™] Dim:120 x 82 x 30mm