

aSENSE (Disp)



An advanced transmitter that measures CO₂ concentration and temperature.

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.

The product is designed to control ventilation by transmitting the measured carbon dioxide and temperature value to the Master or DDC of the system. 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 saving energy and create a healthy indoor environment.

Standard specification

| | |
|-----------------------------|---|
| Measured gas | Carbon dioxide (CO ₂) |
| Operating principle | Non-dispersive infrared (NDIR) |
| Measurement range | 0–2000ppm |
| OUT1 CO ₂ | 0–10VDC, 0–2000ppm 0/4–20mA, 0–2000ppm |
| OUT2 °C | 0/2–10VDC, 0–50°C |
| OUT3 | - |
| Accuracy (CO ₂) | ±30ppm ±3% of reading |
| Dimensions | 120 x 82 x 30mm |
| Life expectancy | >15 years |
| Operating temperature range | 0–50°C |
| Power supply | 24VAC/DC |
| Communication | UART |

Key benefits

- Maintenance-free
- Available in different carbon dioxide measurement ranges
- Available in different housings
- Internal automatic self-diagnostics
- Cost-optimised for connection to DDC



aSENSE (Disp) Technical Specification

General Performance:

| | |
|--|---|
| Storage Temperature Range | -40–70°C (display model Disp: -20–50°C) |
| Sensor Life Expectancy | >15years ¹ |
| Maintenance Interval | No maintenance required ¹ |
| Self-Diagnostics | Complete function check, yellow LED and LCD error indication (display model Disp) |
| Display (model Disp) | 4 Digits, 7 segments LCD with ppm indicator |
| Warm-up Time | >1min. (@ full specs >5min.) |
| Operating Temperature Range ² | 0–50°C |
| Operating Environment | Residential, commercial spaces |

Electrical / Mechanical:

| | |
|-------------------------------------|--|
| Power Input | 24VAC ±20%, 50/60Hz (half-wave rectifier input) |
| Power Consumption | <1W average |
| Electrical Connections ³ | 1.5mm ² screw terminals for power input (G+, G0) and outputs (OUT1, OUT2) |

CO₂ Measurement:

| | |
|-------------------------|---|
| Sensing Method | Non-dispersive infrared (NDIR) waveguide technology with ABC automatic background calibration algorithm |
| Sampling Method | Diffusion |
| Response Time (T1/e) | <3min. diffusion time |
| Measurement Range | 0–2000ppm |
| Accuracy ^{1,4} | ±30ppm ±3% of measured value |
| Pressure Dependence | +1.6% reading per kPa deviation from normal pressure, 100kPa |

Temperature Measurement:

| | |
|--|---|
| Operating principle | Negative Temperature Coefficient (NTC) resistor |
| Measurement range | -20–60°C |
| Accuracy ⁵ / Digital resolution | ±1°C / 0.1°C on display, 0.01°C by UART |

Outputs:

| | |
|-------------------------------------|---|
| OUT1 ⁶ | 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 0–2000ppm _{vol} |
| OUT2 ⁶ | 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 | R _{OUT} <100Ω R _{LOAD} >5kΩ |

Current loop output:

| | |
|----------------------------|-------------------------|
| D/A Conversion Accuracy | ±2% of reading ±0.3mA |
| D/A Resolution | 0.02mA |
| Electrical Characteristics | R _{LOAD} <500Ω |

Note 1: In normal IAQ applications, accuracy is defined after minimum three (3) ABC periods of continuous operation. Some industrial applications do require maintenance.

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

Note 3: Different options exist and can be customised depending on the application. Please, contact Senseair for further information.

Note 4: Repeatability is included. Uncertainty of calibration gases (±1% currently) is added to the specified accuracy.

Note 5: Valid only for units configured in voltage output mode.

Note 6: During power up, OUT1 and OUT2 are defined to be low. Exact value depends on many factors including temperature.

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EURO-INDEX fournit des services pour tous les instruments de sa gamme de fournitures et offre des services, de la connaissance et du personnel hautement qualifié pour l'entretien (préventif), la réparation et le calibrage de vos instruments de mesure.

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EURO-INDEX dispose d'un laboratoire de maintenance et de calibrage particulièrement moderne, titulaire d'une accréditation conforme à la norme NEN-EN-ISO/IEC 17025. Cette accréditation est valable pour différentes grandeurs, telles que spécifiées dans le champ d'application associé au numéro d'accréditation K105.



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Guichet des services



Calibrage de l'analyse de gaz de combustion



Séminaires et ateliers



Calibrage de la thermographie

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Portée accréditée
voir www.rva.nl