

tSENSE (Disp)



CO₂, Temperature and RH Sensor with colour touch display

tSENSE is an advanced and versatile 3-in-1 sensor designed for installation in the air-conditioned zone. It measures CO₂ concentration, temperature and humidity in the ambient air accurately without need for additional compensation – true read. The data transmits to a BMS system or stand-alone controller using industry standard output signals and communication protocols.

tSENSE combines all the necessary elements for effective climate control in commercial office buildings, hospitals, hotels, schools and other facilities. Using CO₂-monitoring for demand control ventilation (DCV) allows healthy, comfortable and cost-effective environment for the occupants.

tSENSE is flexible in design with temperature control in combination with humidity control optional. Though suitable for use in many different energy-efficient ventilation strategies, Senseair welcomes any discussions for specific needs.

Complies with ASHRAE standard 189.1
(±50ppm @ 1000ppm of measured CO₂ value)

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
OUT2 Temperature	0–10VDC, 0–50°C
OUT3 Relative Humidity	0–10VDC, 0–100%RH
Relay CO ₂	On ≥1000 ppm _{vol} Off ≤900ppm _{vol}
Accuracy (CO ₂)	±30 ppm ±3% of reading
Dimensions [mm]	125 x 85 x 22
Dimensions display [mm]	49 x 37
Life expectancy	>15 years
Operation temperature range	0–50°C
Power supply	12VDC, 24VAC/DC
Communication	Modbus (MB) or BACnet (BAC) protocol over RS485

Key benefits

- Maintenance free
- Three sensors in one housing: CO₂, temp and RH
- Colour touch display with possibility of customisable GUI
- PIN codes for access to display and meter settings
- Improved housing design for effective measurement



Senseair
An Asahi Kasei Group Company.

tSENSE (Disp) Technical Specification

General Performance:

Storage Temperature Range	-30–70°C
Sensor Life Expectancy	>15 years
Maintenance Interval ¹	Maintenance free
Self-Diagnostics	Complete function-check of the sensor module
Display (Disp)	Configurable colour LCD with CO ₂ [ppm], Temperature [°C] and Humidity [%RH]
Buttons	Touch display (Disp)
Warm-up Time	≤1min.(@ full specs 15min)
Operating Temperature Range	0–50°C
Operating Humidity Range	0–95%RH, non condensing humidity environment
Operating Environment	Residential, commercial

Electrical / Mechanical:

Power Input	12VDC, 24VDC or 24VAC (50–60Hz) ±20%
Power Consumption	<0.35W average non-display version, <0.6W display version
Peak Power Consumption	<2W
Wiring Connections	Screw terminal, max 1.5mm ² , Containing: Power, GND, Out1, Out2, Out3, RS485. Option: passive temperature or relay

CO₂ Measurement:

Sensing Method	Non-dispersive infrared (NDIR) waveguide technology
Sampling Method	Diffusion
Response Time (T1/e)	<3min
Measurement Range	0–2000ppm _{vol} ±50ppm (@1000ppm _{vol} , 17–28°C and 30–60%RH)
Accuracy ²	Typical full range: ±30ppm +3% of measured value ^{3,4} +1.58% reading per kPa deviation from normal pressure, 101.3kPa
Pressure Dependence	15s
Measurement Interval	

Temperature Measurement:

Measurement Range (T)	0–50°C
Accuracy ⁵	±0.5°C (@ 17–28°C), ±1.0°C (outside 0–50°C)
Repeatability	±0.25°C (@ 17–28°C)
Response Time	<6min (Air velocity of 0.15m/s)
Measurement Interval	15s

Relative Humidity Measurement:

Measurement Range	0–100%RH
Accuracy ⁵	±5%RH (@ 20–80%RH)
Hysteresis	±1%RH (@ 20–80%RH)
Annual Drift	<±0.5%RH
Repeatability	±0.25%RH (@ 17–28°C)
Response Time	<6min (Air velocity of 0.15m/s)
Measurement Interval	15s

Outputs:

Linear Analog Outputs:

Protection	PTC-fuses (auto reset), short-circuit safe
Output Conversion Accuracy	±2% of reading ±20mV
Output Signal	Voltage output 0–10V, Rout <100Ω, Load: >5kΩ
Output Resolution	10-bits, 10mV steps, 0.1% steps of full ppm/°C/%RH range
Out1: CO ₂ ⁶	0–10V, corresponds to 0–2000 ppm _{vol} , at screw terminal
Out2: Temperature (T) ⁷	0–10V, corresponds to 0–50°C, at screw terminal
Out3: Relative Humidity (RH) ⁷	0–10V, corresponds to 0–100%RH, at screw terminal

Digital Output:

Relay (RL) ⁶	On ≥1000 ppm _{vol} CO ₂ , Off ≤900ppmv _{ol} , CO ₂ , at screw terminal
Input Source	Form C / DPDT, I _{max} : 1A/50VAC/24VDC CO ₂ / T / RH (configurable via touch display)

Note 1: No maintenance required in normal indoor air as ABC (Automatic Baseline Correction) is used.

Note 2: In normal IAQ applications, accuracy is defined after minimum three (3) ABC-pe riods of continuous operation with ABC.

Note 3: Accuracy is specified over operating temperature range. Specification is refer enced to certified calibration mixtures. Uncertainty of calibration gas mixtures (±1% currently) is to be added to the specified accuracy for absolute measurements.

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

Note 5: Depending on display brightness setting.

Note 6: Can be configured with PC software UIP (version 5 or later). See information at senseair.com

Service van EURO-INDEX

EURO-INDEX verleent service op alle meetinstrumenten uit haar leveringspakket en biedt de faciliteiten, kennis en hoog gekwalificeerd personeel voor (preventief) onderhoud, reparatie en kalibratie van uw meetinstrumenten.

Geautoriseerd Service Centrum

EURO-INDEX is van alle vertegenwoordigde merken een Geautoriseerd Service Centrum.

Dit betekent dat uw instrumenten worden behandeld door goed opgeleid en kundig personeel, dat beschikt over de juiste gereedschappen en software. Er worden uitsluitend originele onderdelen gebruikt en de garantie van uw instrument, evenals de certificering (ATEX, EN50379, etc.) blijven intact.

[MEER INFO](#)

Service- en kalibratielaboratorium

EURO-INDEX beschikt over een bijzonder modern service- en kalibratielaboratorium met RvA accreditatie naar NEN-EN-ISO/IEC 17025. Deze accreditatie geldt voor verschillende grootheden, zoals gespecificeerd in de scope bij accreditatienummer K105.

[MEER INFO](#)



Bekijk de video op ons YouTube kanaal en ontdek alles over KWS

KWS®

KWS is een uniek servicesysteem voor uw meetinstrumenten met periodiek onderhoud en kalibratie. Veel zaken worden voor u geregeld, zodat u zonder zorgen gebruik kunt maken van uw meetinstrumenten. De kosten zijn laag en voorspelbaar.

[MEER INFO](#)

Digitale toegang tot uw kalibratiecertificaten met Mijn KWS

Via het Mijn KWS webportal heeft u altijd en overal toegang tot uw kalibratiecertificaten en gerelateerde documenten.

[MEER INFO](#)

Verhuur van meetinstrumenten

- Uitgebreid assortiment
- Deskundig advies
- Instrumenten worden geleverd met accessoirepakket en herleidbaar kalibratiecertificaat

[MEER INFO](#)

EURO-INDEX Academy

- Producttrainingen (individueel en klassikaal)
- Seminars
- Demonstratie- en instructievideo's

[MEER INFO](#)



Servicebalie



Kalibratie rookgasanalyse



Seminars en workshops



Kalibratie thermografie

Wijzigingen voorbehouden EURO-INDEX® VL 18001

Het Bluetooth® woord- en beeldmerk zijn eigendom van Bluetooth SIG, Inc. Gebruik van deze merken door EURO-INDEX geschiedt onder licentie.



BELGIË
Leuvensesteenweg 607
1930 Zaventem
T: 02 - 757 92 44
F: 02 - 757 92 64
info@euro-index.be
www.euro-index.be

NEDERLAND
Rivium 2e straat 12
2909 LG Capelle a/d IJssel
T: +31 - (0)10 - 2 888 000
F: +31 - (0)10 - 2 888 010
verkoop@euro-index.nl
www.euro-index.nl

