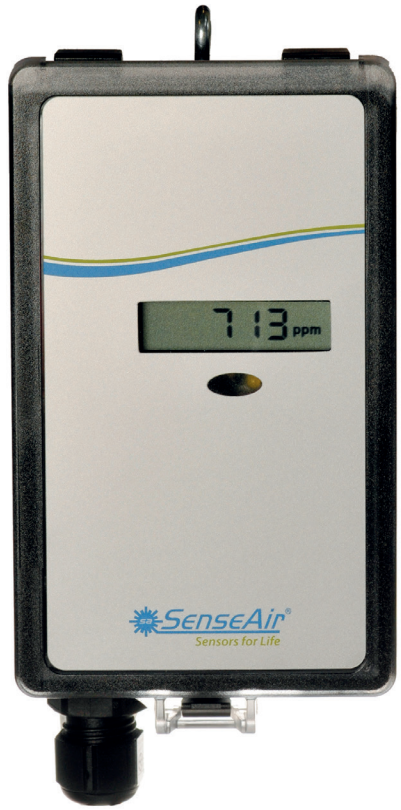
aSENSE GH Disp



CO_2- and Temperature Transmitter for Green House Installation.

aSENSE GH Disp measures both carbon dioxide concentration and temperature in the ambient air and sends these values to the control system.

aSENSE GH Disp is a low-cost transmitter for installation in the climate zone. The special coated PCB and extra dust/water protection filter, makes aSENSE GH Disp suited for all kinds of greenhouses, mushroom farms, incubators and similar environments.

Standard specification

Measured gas	Carbon dioxide (CO_2)
Operating principle	Non-dispersive infrared (NDIR)
Measurement range CO_2	0–2000ppm
OUT1 linear output	0/2–10VDC 0–2000ppm CO_2 0/4–20mA, 0–2000ppm CO_2
OUT2 linear output	0/2–10VDC, 0–50°C 0/4–20mA, 0–50°C
OUT3 Relay	On/Off 1000ppm/900ppm
Accuracy CO_2	±30ppm ±3% of reading
Dimensions	152 x 84 x 42mm
Life expectancy	>15 years
Operating temp range	0–50°C
Operating humidity range	5–85%RH (non condensing)
Power supply	24VAC/DC ±20%, 50/60Hz
Power consumption	<1W average
Communication	UART (Modbus)

Key benefits

- State-of-the-art non-dispersive infrared (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 built-in NTC thermistor for measuring temperature
- Fully coated PCB together with a special filter equipped housing makes aSENSE GH perfectly resistant towards dust and humidity
- Optional RS485 digital interface to PC and advanced control network systems

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aSENSE GH Disp Technical Specification

General Performance:

Operating Temperature Range	0–50°C
Storage Temperature Range	-20–50°C
Operating Humidity Range	5–85%RH (non condensing)
Warm-up Time	<5min (@ full specs <15 minutes)
Sensor Life Expectancy	>15 years[1]
Maintenance Interval	every 30 days maintenance reommended[1]
Self-Diagnostics	Complete function check of the sensor
Status LED Indicators	yellow = maintenance support, red = relay closed
Display	4 Digits, 7-segments LCD with ppm- and °C indicator

Electrical / Mechanical:

Power Input	24VAC ±20%, 50/60Hz (half-wave rectifier input) 10.5–40VDC (absolute min/max rating)
Power Consumption	<1W average
Digital/Analogue inputs block	spring-load terminals
UART connector	5-pin, 2.54mm pitch, slide connector
Electrical Connections	screw terminals (max 1,5mm^2 wires) for power input (G+, G0) and outputs (OUT1, OUT2)

CO_2 Measurement:

Sampling Method	passive gas diffusion (no moving parts)
Response Time (T1/e)	<3min. diffusion time
Accuracy	±30ppm ±3% of reading[2]
Pressure Dependence	+1.6% reading per kPa
Measurement Range	0–2000ppm

Temperature Measurement:

Operating principle	Negative Temperature Coefficient (NTC) resistor
Measurement range	0–50°C
Accuracy	±1°C

Outputs:

Linear analogue outputs:

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 0–2000ppm$_{vol}$
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 (10 bit)
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 (10 bit)
Electrical Characteristics	R_{LOAD} <500Ω
PC User Interface Program	UIP version 5.0 (or higher)[3]
RS485 network com	(accessory -485) RS485 terminal slide-on port, Modbus option

Digital output:

OUT3	
Relay	On/Off 1000/900ppm CO_2, at screw terminal Imax: 1A/50VAC/24VDC
Input Source	CO_2

Note 1: Zero gas calibration every 30 days recommended. For more information, please contact Senseair AB

Note 2: Accuracy is specified over operating temperature range at normal pressure 101.3kPa. Specification is referenced to certified calibration mixtures. Uncertainty of calibration gas mixtures (±1% currently) is to be added to the specified accuracy for absolute measurements.

Note 3: Free download from senseair.com