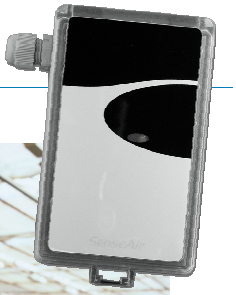
Model *aSENSE™ - GH*

Carbon dioxide transmitter for Green House Installation



PRODUCT DESCRIPTION

Model aSENSE™ - GH is an all-digital, low-cost transmitter for installation in the climate zone.

aSENSE™ - GH measures both temperature and carbon dioxide concentration in the ambient air, transforms the data into digital output signals and sends these values to a comprehensive system.

The special coated PCB and extra dust/water protection filter, makes aSENSE™ - GH suited for all kinds of greenhouses, mushroom farms, incubators and similar environments.

FEATURES

- State-of-the-art non-dispersive infrared (NDIR) technology to measure carbon dioxide gas
- Maintenance free in normal applications
- 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
- 2 x programmable mixed sensor analogue outputs 0/2-10 VDC and/or 0/4-20 mA for connection to remote central computer.
- OUT1 0 - 3 000 pm CO_2 = 4 - 20 mA
- OUT2 0 - 50 °C = 4 - 20 mA
- Optional RS485 digital interface to PC and advanced control network systems

APPLICATIONS

Carbon dioxide is a necessity to all forms of life. It is a vital parameter in the production of all kinds of plant species, bacteria, chicken etc. A natural application for *aSENSE™ - GH* is therefore to supervise and/or control the climate in e. g. *green-houses, mushroom farms, agricultural, horticultural and medical incubators* based on CO_2 concentration and temperature. SenseAir model *aSENSE™ - GH* is especially suited for installation in these and similar environments since it measures both temperature & carbon dioxide concen-tration in one single unit. Both are very important parameters when trying to achieve an optimum growth.

Integrated complimentary humidity sensor is available as option.

The two-in-one function reduces the installation cost by minimizing the total number of boxes and wirings needed!

CERTIFIED ISO 9001 SEMKO CERTIFICATION

aSENSE™ - GH transmitter for Green House Installation
*Technical Specification **

General Performance

Compliance with	EMC directive 89/336/EEC RoHS directive 2002/95/EG
Operating Temperature Range [1]	0 - 50 °C
Storage Temperature Range	-20 to +70 °C
Operating Humidity Range	0 to 95% RH (non-condensing)
Warm-up Time	1 min. (@ full specs □ 15 minutes)
Sensor Life Expectancy	> 15 years
Maintenance Interval	no maintenance required [2,3]
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 / °C / % indicator
Pushbuttons [4]	offer a selection of installation support, calibration and operation functions

Electrical/Mechanical

Power Input	24 VAC/VDC±20%, 50-60 Hz (half-wave rectifier input)
Power Consumption	≤ 3 Watts average
Wiring Connections	max 1,5 mm^2 wires
Main terminal block	screw terminals
Digital/Analog inputs block	spring load terminals
UART connector	5-pin, 2.54 mm pitch, slide connector
Dimensions without housing	9.7 x 6.1 x 1.9 cm (L x W x D)

Outputs

Analog [5]

Protection	PTC fuse (auto reset) on signal return *M*, short-circuit safe
Output limits	MIN & MAX limits may be individually set to all outputs
Linear outputs OUT1 & OUT2	0/2-10 VDC R_{OUT} < 100 OHM, R_{load} > 5k OHM (0/1-5 VDC optional) 0/4-20 mA R_{load} < 500 OHM
Linear output OUT4	0-10 VDC R_{OUT} < 100 OHM, R_{load} > 5k OHM
D/A Resolution	10 bits, 10 mV / 0.016 mA
D/A Conversion Accuracy	voltage mode: ± 2% of reading ± 50 mV current loop : ± 2% of reading ± 0.3 mA

ON/OFF

Relay (OUT3)	isolated N.O., 1mA/5V up to 1A/50VAC/24VDC.
Open collector OUT4	in ON/OFF mode: max 0.5A/55VDC (halfwave rectifier for AC)

UART Serial com port

Protocol	SenseAir protocol *(see comprot 0700xx rev 3_04.pdf)* [7] PC-interface
RS232 UART cable with sliding contact and driver (model *A232 Cable*)	
PC User Interface Program	UIP version 4.0 (or higher) [6]
RS485 network com.	(accessory *-485)* RS485 terminal slide-on port, Modbus option
LonWorks™ network com.	(accessory *-LON)* LonWorks™ add-on PCB

Note 1: Lower temperature operation range can be reached by adding a box heater assembly.

Note 2: In normal IAQ applications. Some industrial applications may require an annual zero gas purge, which automatically recalibrates the CO_2 sensor

Note 3: For *-RH* models, in applications with elevated temperatures and high humidity levels the relative humidity probe calibration may have to be maintained.

Note 4: Different menus exist for different models. Push-buttons are available only in models having a LCD.

Note 5: The specifications are valid for the output load connected to ground *G0* or common signal return *M*.

Note 6: Free download from SenseAir's home page *www.senseair.com*

Note 7: For more information, please contact SenseAir AB

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