Duct Mount $C0_2$, Air Quality, RH & Temp Transmitter

Features

- Up to 3 analogue outputs, CO_2, AQ, RH or Temp.
- CO_2 Self-calibration algorithm
- LCD with real time measurements

Specification

Range's:	
CO_2	0 to 2000ppm
AQ	0 to 30ppm
RH	0 to 100%
Temp.	0 to 50°C
Output signals up to three (jumper selectable):	
0-10Vdc, 4-20mA or Modbus	
Modbus RS485	19200bps, 15KV antistatic protection
Power supply:	
Voltage output	24Vac/dc, ±10%
Current output	24Vdc only, ±10%
Consumption	Max, 3.5W Avg, 2.8W
Maximum current	146mA
Accuracy @ 25°C:	
CO_2	±40ppm +3% of reading
AQ	±10%
RH	<±3%RH
Temp.	±0.5°C
CO_2 Stability	<2% of FS over sensor life
Sensor life	10 years, typical
Response time	<2 minutes, for 90% step change
Stabilization time:	
First time	2 Hours
Operational	2 Minutes
LCD display	3 colour, see page 2 for details
Environmental:	
Operational:	
Temp	-10 to + 50°C
RH	0 to 95% non-condensing
Storage temp.	-40 to +70°C
CE Conformity	CE Marked
Housing dimensions:	
Housing	100 x 80 x 50mm
Probe	139 x 26mm
Housing material	ABS
Protection	IP54
Country of origin	China

Product Codes

GS-CO2-AQ-RHT-D

Carbon dioxide, air quality, humidity or temperature transmitter with current or voltage selectable outputs

GS-CO2-AQ-RHT-D-M

Carbon dioxide, air quality, humidity or temperature transmitter with current, voltage and Modus selectable outputs

⚠ Please Note:

Current versions are NOT loop powered and will require a common 0V connection.

Technical Overview

This innovative one housing solution for combined sensing of CO_2, Air Quality, RH and Temp measurement, offers long term high stability and accuracy for all measured parameters.
The air quality sensor is a mix gases sensor with high sensitivity for VOC such as ammonia, toluene, formaldehyde and cigarette smoke, alcohol, $H2_S$, and carbon monoxide.
The sensor can be used to ensure adequate ventilation while maximizing energy savings by ventilating at the optimum level, making these ideal for all types of ventilation in many applications.

Installation

1. Select a location in the duct where dust & contaminants are at a minimum.
2. Unscrew and remove the front panel from the base.
3. Drill two pilot holes at 100mm centres, and a 30mm hole centre for the probe in the surface to which the sensor is to be mounted.
4. Feed cable through the knockout in the base of the housing and terminate the cores at the terminal block. Install wiring into terminal blocks as required.
5. Select output type, 4-20mA or 0-10Vdc. Do **not** adjust any of the potentiometers as this will void warranty.
6. Ensure that the supply voltage is within the specified tolerances.
7. Replace the front cover to the base plate, and tighten the screws.
8. Power the unit, pre-commissioning checks can be made after 10 minutes. Full commissioning should not be carried out for at least 48 hours. This will enable the ABC Logic self calibration procedure to complete.
9. It is recommended that screened cable be used and that the screen should be earthed at the controller only. Care should be taken not to lay control signal wiring in close proximity to power or other cables which may produce significant electromagnetic noise.

ABC Logic Self-calibration

When first powering the transmitter, it needs to be powered continuously for at least 2 days. This will allow the CO_2 sensors ABC Logic self-calibration system operate correctly.

Display

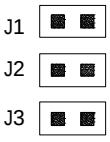
The 3-colour backlit display shows all measured parameters and depending on the real time levels of CO_2 and VOC's the display will change colour when above the default set points.

Green	CO_2	<1000ppm (optimal air quality)
	VOC	<10ppm (low pollution)
Yellow	CO_2	>1000ppm (moderate air quality)
	VOC	>10ppm (medium pollution)
Red	CO_2	>1400ppm (poor air quality)
	VOC	>20ppm (heavy pollution)

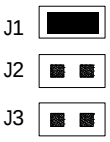
Jumper Settings

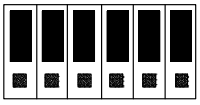
Output signal type

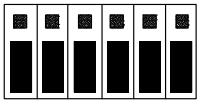
0-10Vdc (default):



4-20mA:





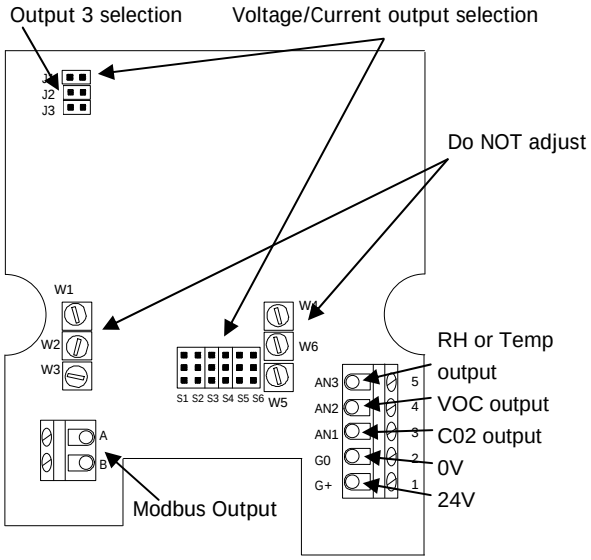


Humidity or temperature output for OUT3

Humidity (default):

Temperature:

Connections



Please Note:

Current output

If using in current output mode, the sensor must only be used with a 24Vdc supply. The sensor may be damaged if supplied with AC.

When using current output mode they are **NOT** loop powered and will require a common 0V connection.

Trend Scaling

IQ1xx and early IQ2x series (without type 5, characterise)

0-10Vdc		4-20mA	
(0 to 2000ppm, CO_2)			
Brange:	-2000	Brange:	-3000
Trange:	2000	Trange:	2000
Upper:	2000	Upper:	2000
Lower:	0	Lower:	0
Exponent:	4	Exponent:	4

0-10Vdc		4-20mA	
(0 to 30%, VOC)			
Brange	-30	Brange	-45
Trange	300	Trange	30
Upper	30	Upper	30
Lower	0	Lower	0
Exp	2	Exp	2

0-10Vdc		4-20mA	
(0 to 100%, RH)			
Brange	-100	Brange	-150
Trange	100	Trange	100
Upper	100	Upper	100
Lower	0	Lower	0
Exp	3	Exp	3

0-10Vdc		4-20mA	
(0 to +50°C)			
Brange	-50	Brange	-75
Trange	50	Trange	50
Upper	50	Upper	50
Lower	0	Lower	0
Exp	3	Exp	3

Trend Scaling (continued)

Later IQ2x series and IQ3 (with type 5, characterise)

0-10Vdc		4-20mA	
(0 to 2000ppm, CO_2)			
Upper:	2000	Upper:	2000
Lower:	0	Lower:	0
Exponent:	4	Exponent:	4
Points Used:	2	Points Used:	2
I1:	0	I1:	4
O1:	0	O1:	0
I2:	10	I2:	20
O2:	2000	O2:	2000

0-10Vdc		4-20mA	
(0 to 30%, VOC)			
Upper	30	Upper	30
Lower	0	Lower	0
Exp	2	Exp	2
Points used	2	Points used	2
I1	0	I1	4
O1	0	O1	0
I2	10	I2	20
O2	30	O2	30

0-10Vdc		4-20mA	
(0 to 100%, RH)			
Upper	100	Upper	100
Lower	0	Lower	0
Exp	3	Exp	3
Points used	2	Points used	2
I1	0	I1	4
O1	0	O1	0
I2	10	I2	20
O2	100	O2	100

0-10Vdc		4-20mA	
(-10 to 50°C)			
Upper:	50	Upper:	50
Lower:	-10	Lower:	-10
Exponent:	3	Exponent:	3
Points Used:	2	Points Used:	2
I1:	0	I1:	4
O1:	-10	O1:	-10
I2:	10	I2:	20
O2:	50	O2:	50