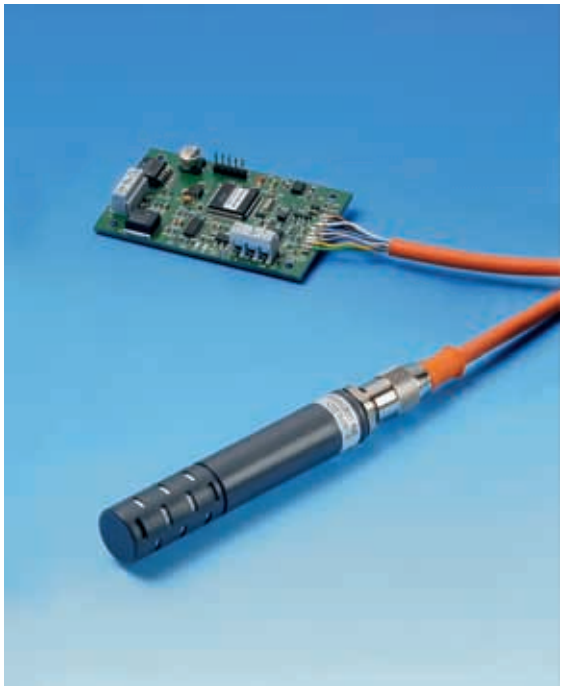
P.O. Box 26, FIN-00421 Helsinki, FINLAND
Tel: +358 9 894 91
Fax: +358 9 8949 2485
Email: industrialsales@vaisala.com
www.vaisala.com

GMM220 Series Carbon Dioxide Modules for Demanding OEM Applications



GMM220 modules withstand harsh conditions. They provide high CO_2 measurement accuracy over wide temperature and relative humidity ranges.

Features/Benefits

- Incorporates CARBOCAP® - the silicon based NDIR sensor
- Several measurement ranges to choose from
- IP65 protected probe against dust and spray water
- Interchangeable probes - easy maintenance

For harsh environments

The GMM220 Series Modules are designed for Original Equipment Manufacturers (OEM's) requiring CO_2 measurements in demanding applications.

The modules are optimized for integration into equipment for greenhouse control, incubators, fermentors, safety alarming and integrated systems. Many advanced features enable trouble-free control of carbon dioxide levels also in demanding applications and harsh environments.

CARBOCAP® – the silicon based CO_2 sensor

The GMM220 Series Modules incorporate the new industrial CARBOCAP® Sensor. The patented sensor has unique reference measurement capabilities. Its critical parts are made of silicon; this gives the sensor outstanding stability over both time and temperature. Since water vapor, dust, and most chemicals do not effect the measurement, the GMM220 Series Modules can be used in harsh and humid environments.

Interchangeable probes

The GMT220 probes are truly interchangeable. They can be removed and reattached or replaced at any time – without the need for calibration and adjustment. The probes do not only make calibration and field service easy; they also enable a simple change of measurement range by simply replacing one probe with another.

Different configurations to meet your demanding applications

The user has a choice of measurement ranges up to 20 % CO_2: the GMM221 for higher and the GMM222 for lower concentrations of CO_2. Different power supply voltages, output options as well as cable lengths, connectors, and mounting gear are also available.

Technical Data

Carbon Dioxide

Measurement Ranges	
GMM221	0...2% CO_2
for high concentrations	0...3% CO_2
	0...5% CO_2
	0...10% CO_2
	0...20% CO_2
GMM222	0…2000 ppm
for low concentrations	0…3000 ppm
	0…5000 ppm
	0…7000 ppm
	0…10 000 ppm
Accuracy at +25 °C against certified factory references	
GMM221	<±[0.02% CO_2 + 2% of reading]
GMM222	<±[20 ppm CO_2 +2% of reading]
	(incl. repeatability and calibration uncertainty)
Nonlinearity	<±0.5 %FS
Temperature dependence of output (typical value)	0.1 %FS /°C
Pressure dependence (typ.)	0.15% of reading/hPa
Long-term stability	<±5 %FS/2 years
Response time (63%)	
GMM221	20 seconds
GMM222	30 seconds

General

Analog output signals	0...20 or 4...20 mA
	0...1 V or 0...2 V, 0...2.5 V, 0...5 V
Resolution of analog outputs	0.03 %FS
Recommended external load:	
current output	max. 200 Ohm
voltage output	min. 1 kOhm
Power supply	11-20 VDC or
	18...30 VDC
Power consumption	<2.5 W
Warm-up time	<15 minutes
Operating temperature range	-20...+60 °C
Storage temperature range	-30...+70 °C
Operating humidity range	
probe	0...100 %RH
	non-condensing
mother board	0...85 %RH
	non-condensing
Probe housing material	PC plastic
Housing classification (probe only)	IP65
Weight:	
GMM221 (w/2m cable)	max. 180 g
GMM222 (w/2m cable)	max. 200 g
Probe cable length	0.6 m, 2 m, 6 m or 10 m

Accessories

GMP221, GMP222	spare probe
(use the order form to define measurement range etc.)	
25245GM	clips (2 pcs) for attaching the probe
GM45156	mounting flange for the probe
GMM220Z600	6.0 m probe cable
GMM220Z1000	10.0 m probe cable
19040GM	serial COM adapter

Electromagnetic compatibility

Complies with EMC standard EN61326-1:1997 + Am1:1998; Generic Environment.

Dimensions

Dimensions in mm (inches)