

GMD/W20 Series Carbon Dioxide Transmitters for **Demand Controlled Ventilation Applications**



The GMD/W20 series transmitters are designed for use in ventilation-related applications.

The duct mounted Vaisala CARBOCAP® Carbon Dioxide Transmitter Series GMD20 and wall mounted GMW20 are specially designed for Demand Controlled Ventilation (DCV). They are easy to install and require no maintenance. The recommended calibration interval is five years.

Vaisala CARBOCAP® technology

The GMD/W20 Series Transmitters use the silicon-based Vaisala CARBOCAP® Sensor. The simple structure and reference measurement capabilities make this Single-Beam, Dual-Wavelength NDIR sensor extremely stable and reliable.

The temperature and flow dependences of the sensor are negligible. In addition, the measurement accuracy is not affected by dust, water vapor and most chemicals.

Versatile transmitters

The GMD/W20 series transmitters can be used independently, or incorporated into building energy management systems. The series consists of duct mount units GMD20/D and wall mount units GMW21/D and GMW22/D. Version D has a display. The two sizes in the wall-mount series make them easy to install for most standard junction boxes.

The duct units' compact sensor head design requires only a small hole in a ventilation duct, thereby minimizing the risk of leaking gaskets and measurement errors.

In addition to the standard 0 ... 20 mA, 4 ... 20 mA and 0 ... 10 V outputs, there are three other options: two LonWorks® interfaces and a relay output. The relay output is standard with the display units.

Features/Benefits

- Versatile transmitters
- · Duct and wall mount models
- Incorporates Vaisala CARBOCAP® Sensor - the silicon-based NDIR sensor
- Excellent long-term stability
- Negligible temperature dependence
- · Ease of installation

Improve indoor air at minimal energy costs

The use of the GMD/W20 series transmitters ensures the best possible control of air quality and results in considerable savings in energy consumption, maintenance and recalibration costs.

Temperature option

The GMA20T temperature module, an option with the GMW21 wall mount unit, combines both CO₂ and temperature measurement into one transmitter. The GMA20T has an output of 0 ... 10 V corresponding to a temperature range of 0 ... +50 °C (+32 ... +122 °F).

GMD/W20 CARBON DIOXIDE

Technical Data

Performance

Carbon dioxide measurement

Measurement range 0 ... 2000 ppm (nominal; can be calibrated for other ranges: 0 ... 5000 ppm, 0 ... 10,000 ppm, 0 ... 20,000 ppm)

Accuracy (including repeatability, non-linearity and calibration uncertainty) $\begin{array}{c} \pm (2 \ \% \ \text{of range} + 2\% \ \text{of reading}) \\ \text{Long-term stability} \\ \text{Response time (63\%)} \\ \text{Warm-up time} \end{array} \begin{array}{c} \pm (3 \ \% \ \text{of range} + 2\% \ \text{of range} / 5 \ \text{years} \\ 1 \ \text{minute}, 15 \ \text{minutes full specifications} \end{array}$

Temperature measurement (optional with GMW21)

Output signal

Corresponding measurement range
Accuracy at +25 °C

Warm up time

Temperature sensor

O ... 10V

0 ... +50 °C (+32 ... +122 °F)

±0.5 °C (0.9 °F)

30 min

Semiconductor IC

Inputs and outputs

0 ... 20 or 4 ... 20 mA and 0 ... 10 V Outputs Optional outputs LonWorks[®] interface Resolution of analog outputs 8 bits Recommended external load: current output max. 500 ohm min. 1 kohm voltage output nominal 24 VAC/DC (18 ... 30 VDC) Operating voltage Connections screw terminals, wire size 0.5 ... 1.5 mm² Power consumption < 2.5 W

Operating environment

 $\begin{array}{lll} \mbox{Temperature} & -5 \dots +45 \ ^{\circ}\mbox{C} \ (+23 \dots +113 \ ^{\circ}\mbox{F}) \\ \mbox{Humidity} & 0 \dots 85 \ ^{\circ}\mbox{RH, non-condensing} \\ \mbox{Flow velocity} \ (\mbox{GMD20}) & 0 \dots 10 \ \mbox{m/s} \\ \mbox{Electromagnetic compatibility} & \mbox{EN61326-1, Generic Environment} \end{array}$

Mechanics

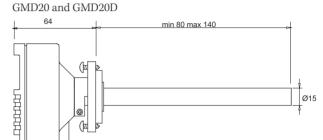
Housing material	ABS plastic
Housing classification (GMD20 electronics housing)	IP65
Weight:	
GMD20 (D)	140 g (170 g)
GMW21 (D)	100 g (130 g)
GMW22 (D)	90 g (120 g)

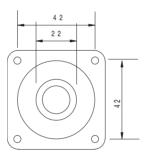
Accessories and options

Display and relay option for GMD/W21/22	GMI21
Relay output option	GMR20
LonWorks module with CO ₂ signal	GML20
(Not available when display option is added)	
LonWorks [®] module with both CO ₂ signal	GML20T
and temperature signals	
(Not available when display option is added)	
Calibration software kit (disk and serial COM adapter)	19222GM
Analog temperature module for GMW21 (not available when	
display option is added)	GMA20T
Hand-held meter for field verification	GM70

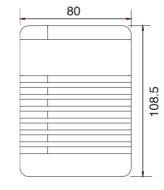
Dimensions

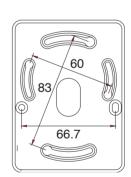
Dimensions in mm



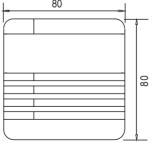


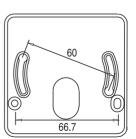
GMW21 and GMW21D











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