GMW80 Series Carbon Dioxide, Humidity and Temperature Transmitters for DCV

GMW80 series transmitters.

Features/Benefits

- Cost-efficient, affordable
- Reliable and maintenance-free operation up to 15 years
- Superior stability due to 2nd-gen proprietary CARBOCAP® technology
- Improved accuracy due to low self-heating of microglow light source
- Easy to install, easy to use
- Versatile – works well in buildings occupied 24/7
- Ideal for demand-controlled ventilation

The Vaisala CARBOCAP® Carbon Dioxide, Humidity and Temperature Transmitter Series GMW80 is based on a second-generation technology for improved reliability and stability. The transmitters are designed to fulfill the needs for CO_2 measurements in standard demand-controlled ventilation applications. Temperature measurement is always included in the GMW80 series transmitters. The optional temperature set-point potentiometer, humidity measurement, relay and LED CO_2 level indication give you the flexibility needed for a variety of projects.

The CARBOCAP® sensors measure CO_2 accurately immediately when powered on. As they have a built-in reference measurement they do not need a lengthy learning phase before the measured values are correct. Proper operation can be verified immediately after snapping on the device cover.

Easy Installation

With modern buildings often having hundreds of sensors, the installation time per unit can be a significant cost factor. Returning to the building site to check sensor operation adds further costs.

The GMW80 series transmitters include a number of subtle design features that have been introduced to make installation and commissioning quick and easy. The pull-out tab makes opening the transmitter faster than before, while also doubling as a quality check slip and holder for the anti-tamper screw. The backplate can be twisted onto pre-mounted screws, and the wiring can be done easily on the clearly marked backplate. The electronics can be snapped on later when the building automation system is commissioned.

Reliable Operation

The GMW80 series transmitters are optimized for low maintenance. The second-generation, low-power CARBOCAP® technology enables a longer lifetime and superior stability than ever before. As the power consumption is low, the heat generated by the electronics does not distort the temperature inside the sensor. The internal reference in the CO_2 sensor guarantees the best stability and operation even in constantly occupied buildings without frequent readjustments.

The reliable operation and accurate measurement values of the GMW80 series transmitters contribute to the significant cost savings brought by demand-controlled ventilation.

Technical Data

Models

GMW86P	CO_2	CO_2 current and voltage output, Pt1000
GMW86PT	CO_2	CO_2 current and voltage output, Pt1000, Temp setpoint
GMW83RP*	CO_2+RH+T	Voltage outputs, Pt1000
GMW83DRP*	CO_2+RH+T	Voltage outputs, Pt1000, Display
GMW83	CO_2+T	Voltage outputs
GMW83T	CO_2+T	Voltage outputs, Temp setpoint
GMW83A	CO_2+T	Voltage outputs, CO_2 indicator LED:s
GMW83D	CO_2+T	Voltage outputs, Display
GMW84	CO_2+T	CO_2 current output
GMW84S	CO_2+T	CO_2 current output, Relay

*models with calibration certificate available

Performance

CARBON DIOXIDE

Measurement range	0 ... 2000 ppm
Accuracy	
+20 ... +30 °C	±(30 ppm +3 % of reading)
+10 ... +20 °C, +30 ... +40 °C	±(35 ppm +3.7 % of reading)
+0 ... +10 °C, +40 ... 50 °C	±(40 ppm +4.8 % of reading)
Stability in typical HVAC conditions	±(15 ppm + 2 % of reading) over 5 years
Warm-up time	1 min; 10 min for full specification
Response time (63 %)	60s
Carbon dioxide sensor	Vaisala CARBOCAP® GM10

TEMPERATURE

Measurement range	0 ... 50 °C
Sensor (on P models)	Pt1000 RTD Class F0.15 IEC 60751
Sensor (for analog outputs)	Digital temperature sensor
Accuracy (GMW83, GMW84)	
+10 ... +30 °C	±0.5 °C
+0 ... +10 °C, +30 ... 50 °C	±1 °C

HUMIDITY

Measurement range	0 ... 95 %RH
Temperature range	+10 ... +30 °C
0 ... 80 %RH	±3 %RH
80 ... 95 %RH	±5 %RH
Temperature range	0 ... +10 °C, +30 ... +50 °C
0 ... 95 %RH	±7 %RH
Stability in typical HVAC applications	±2 %RH over 2 years
Product lifetime	>15 years

Operating Environment

Operating temperature range	0 ... +50 °C (+32 ... 122 °F)
Operating humidity range	0 ... 95 %RH
	Dew point <30 °C (+86 °F)
Storage temperature range	-40 ... +70 °C (-40 ... 158 °F)
Display models	-30 ... +70° C (-22 ... 158 °F)
Electromagnetic compliance	EN61326-1, Industrial Environment

Mechanics

IP class	IP30
Housing material	ABS/PC UL-V0 approved
Housing color	White (RAL9003)
Output connector	Screw terminal
	max. wire size 2mm² (AWG14)
Weight	114 g (Plain and LED version)
	120 g (Setpoint version)
	124 g (Display version)

Inputs and Outputs

Supply voltage	18 ... 35 VDC, 24 VAC ±20 % 50/60 Hz
Max. current consumption at 18 VDC	
GMW83/86	45 mA
GMW84	70 mA
Max power consumption at 30 VAC	
GMW83	0.7 W
GMW84	1.2 W
GMW86	1 W
Relay (GMW84S)	1 pc (max 50 VDC, 500 mA)
Outputs (see model table)	4 ... 20 mA and/or 0 ... 10V
CO_2 output scale	0 ... 2000 ppm
Temperature output scale	0 ... 50 °C
Humidity output scale	0 ... 100 %RH
Passive temperature sensor (P models)	Pt1000 RTD
Temperature setpoint (T models)	10 KΩ potentiometer
LED CO_2 indicator levels (A model)	
flashing red	>2000 ppm
red	1200 ... 2000 ppm
yellow	800 ... 1200 ppm
green	<800 ppm

Spare Parts and Accessories

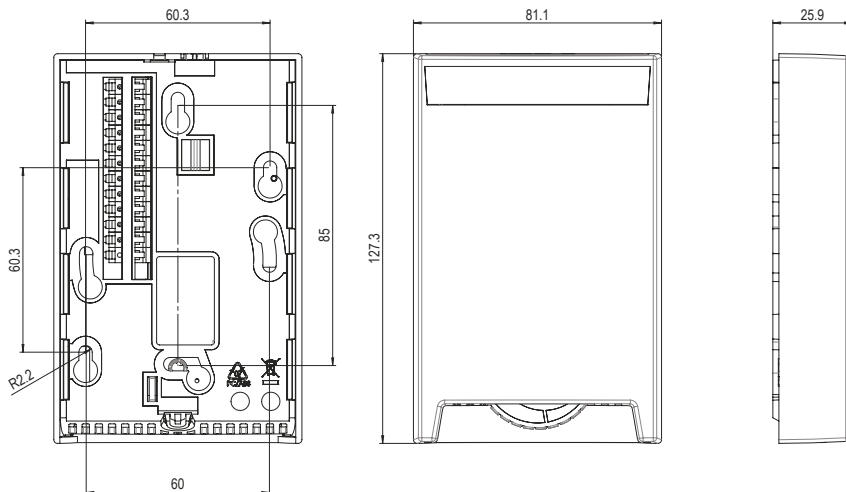|	
CO_2 module	GM10SP80
INTERCAP® sensor	15778HM

GMW83, GMW83A, GMW83RP, GMW84, GMW84S and GMW86P dimensions
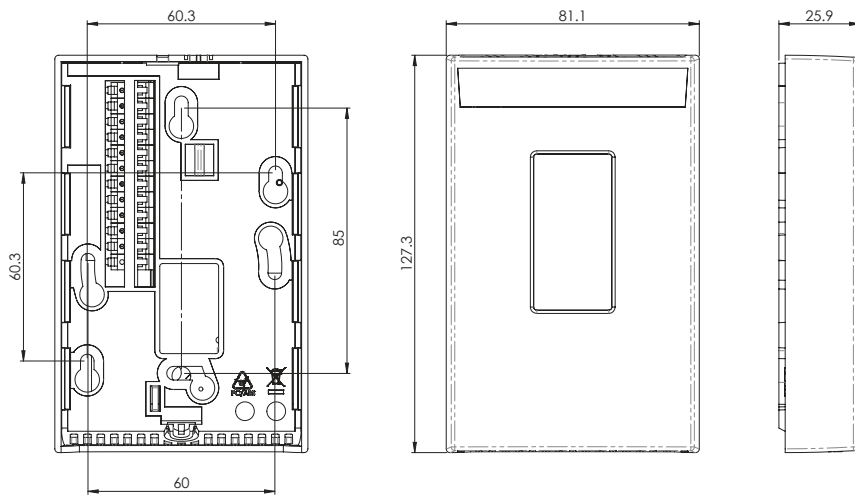
CO_2 4 … 20mA/0 … 10V output
T Pt1000 RTD
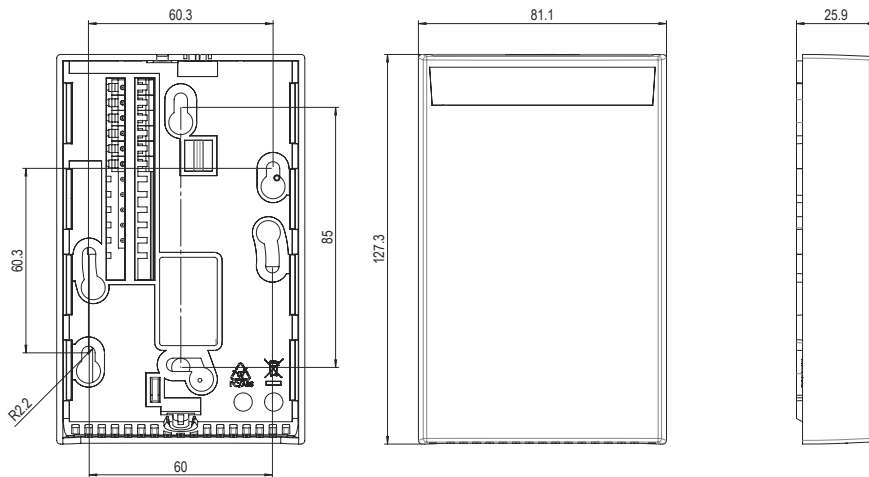
GMW83T and GMW86PT dimensions

CO_2 4 … 20mA/0 … 10V output
T Pt1000 RTD

GMW83D and GMW83DRP dimensions