

GMW80 Series Carbon Dioxide, Humidity and Temperature Transmitters for DCV



GMW80 series transmitters.

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 CO₂ 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 CO₂ level indication give you the flexibility needed for a variety of projects.

The CARBOCAP® sensors measure CO₂ 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.

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

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 CO₂ 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 |

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) | | |
| +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 2mm ² (AWG14) |
| Weight | 114 g (Plain and LED version) 120 g (Setpoint version) 124 g (Display version) |

Inputs and Outputs

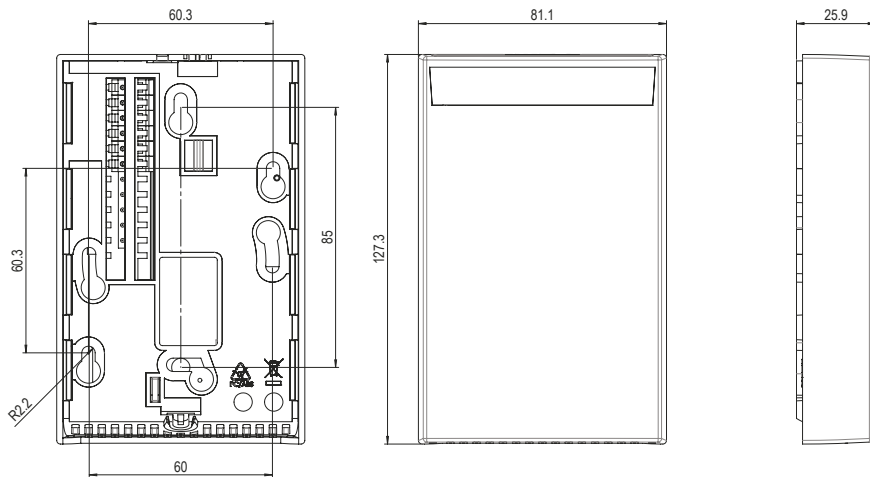
| | |
|--|--------------------------------------|
| Supply voltage | 18 ... 35 VDC, 24 VAC ±20 % 50/60 Hz |
| Max. current consumption at 18 VDC | |
| GMW83/86 | 45 mA |
| Max power consumption at 30 VAC | |
| GMW83 | 0.7 W |
| GMW86 | 1 W |
| Outputs (see model table) | 4 ... 20 mA and/or 0 ... 10V |
| 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 |

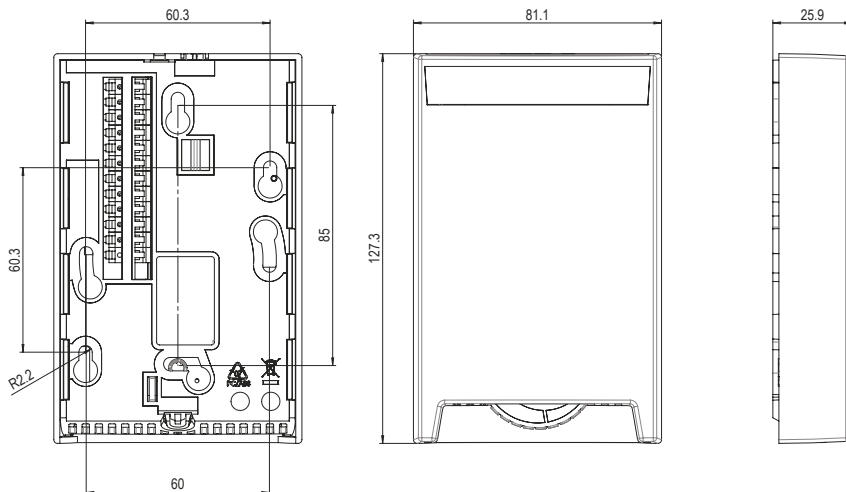
GMW86P

CO₂ 4 ... 20mA/0 ... 10V output
T Pt1000 RTD

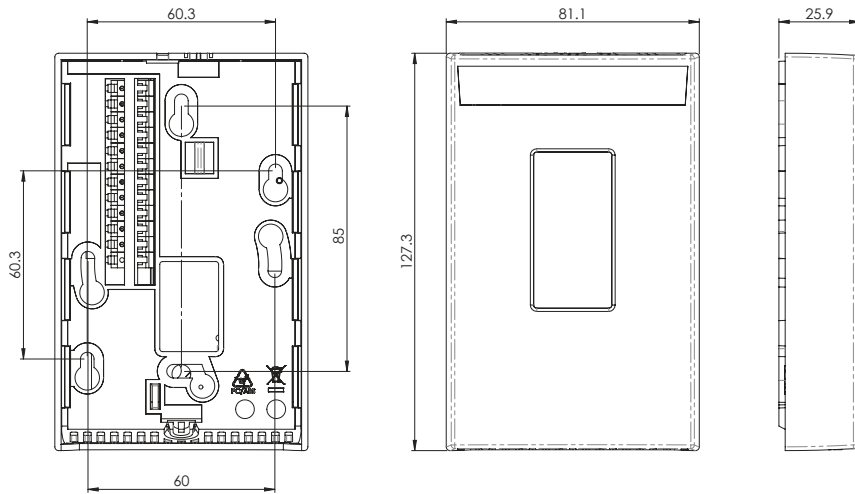


GMW86PT

CO₂ 4 ... 20mA/0 ... 10V output
T Pt1000 RTD



GMW83D dimensions



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