



# 1-CUBE

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## At-line Digital CO<sub>2</sub> meter for beer and carbonated beverages (CO<sub>2</sub> GEHALTEMETER) Type GMD

### Application:

The digital CO<sub>2</sub> meter type GMD enables the determination of CO<sub>2</sub> content in beer, carbonated beverages and sparkling wines in cylindroconical tanks, conditioning tanks or KEG casks, expressed in volumes and g/L.

### Measurement Principle:

The instrument uses Henry's law. The CO<sub>2</sub> content is determined by measuring the temperature and the partial pressure of CO<sub>2</sub> in equilibrium after mechanical shaking of the beverage. A piston allows carbon dioxide to be released very quickly, eliminating the need to shake the device. This allows measurements to be taken more quickly and minimises temperature variations.



### **Working Procedure:**

The inlet valve of the device is connected using a silicone hose to the sampling valve on the pipeline or tank. The measuring chamber is filled with sample. The beverage flow through the measuring chamber can be finely regulated using a screw discharge valve to prevent foam formation during filling. Once the measuring chamber is filled, the outlet valve is closed first, followed by the inlet valve. Then the pressure in the measuring chamber is zeroed by brief opening and closing of the outlet valve. Dissolved CO<sub>2</sub> is released by repeatedly pulling and pressing a piston in the upper part of the measuring chamber, increasing the pressure inside the chamber. Pressing the Enter button initiates the measurement. The device automatically measures pressure and temperature, calculates CO<sub>2</sub> content and displays results in g/L and volumes.

### **Technical data:**

<b>Parameter</b>	<b>Range / Value</b>	<b>Accuracy</b>
CO <sub>2</sub> measurement	2 to 9.99 g/L (1 to 5.15 vol)	0.1 g/L or 0.05 vol
Temperature	-3 to +30 °C	0.1 °C
Pressure	0–600 kPa (0–6 bar)	0.5 %
Display	Digital, 4x20 characters	—
Data memory	400 measurement samples	—
Dimensions (HxWxD)	270x190x300 mm	—
Weight	2.8 kg	—

### **Scope of Delivery:**

CO<sub>2</sub> meter GMD, inlet and outlet silicone hoses, rechargeable adapter, operation manual.

### **Accessories (optional):**

Sampling head for KEG casks (not included in standard delivery, available on request).

### **Advantages & Benefits:**

- High accuracy & calibration capability — suitable for ISO 9001/9002 laboratories.
- Fast & reproducible CO<sub>2</sub> release using pressure pulse generated by piston.
- In addition to CO<sub>2</sub> measurement, the device allows for independent measurement of temperature and pressure.
- 25+ years of manufacturing experience, thousands of units in operation worldwide.
- Repairable, spare parts available.
- Excellent price-to-performance ratio.

## **FAQ :**

### **Differences between GMAS, GMA and GMD models?**

- GMAS & GMA are analog with nomogram-based CO<sub>2</sub> reading.
- GMD measures pressure & temperature automatically and displays CO<sub>2</sub> in g/L and volumes.
- GMD & GMA release CO<sub>2</sub> via piston pressure pulse (fast & reproducible).
- GMAS requires manual shaking until steady pressure (slower, less reproducible, cheapest).

**Here is an overview table of the differences and characteristics of the individual types:**

<b>Function / Feature</b>	<b>GMAS</b>	<b>GMA</b>	<b>GMD</b>
Measurement Type	Analog (manometer)	Analog (manometer)	Digital (display)
CO <sub>2</sub> Release Method	Manual shaking	Pressure impulse by piston	Pressure impulse by piston
Result Determination	Nomogram	Nomogram	Automatic calculation
Speed and Accuracy	Lower (operator dependent)	High (reproducible)	Highest (automated)
Price Level	Most affordable	Mid-range (excellent price/performance ratio)	Premium

### **3.5" colour touchscreen vs monochrome LCD 4×20?**

- Touchscreen = user-friendly.
- Conversely, the device with an LCD display is more cost-effective and offers significantly longer battery life, reducing the need for frequent recharging.



**Note:** At the customer's request, the GMD can be equipped with a colour touch display for an additional charge.