Maria Uusimaa, M.Sc. (Eng.)
Application Manager
Vaisala Helsinki
Finland

Vaisala CARBOCAP® Hand-Held Carbon Dioxide Meter GM70

Sampling with GM70 Pump Option

The GM70 is a hand-held carbon dioxide meter already considered by many professionals to be indispensable for accurate CO_2 measurements in the field. It is especially useful for spot-checking and verifications of CO_2 measurements in laboratories, greenhouses, mushroom farms and demand-controlled ventilation applications. Now the GM70 is available with a pump sampling feature.

The pump option further enhances the use of the Vaisala CARBOCAP® Hand-Held Carbon Dioxide Meter GM70.

The option for pump-aspirated sampling, which was recently added to the versatile features of the Hand-Held Carbon Dioxide Meter GM70, further enhances the product and its use. The pump option of the GM70 is easy to use as an alternative sampling method to conventional diffusion-aspirated sampling. The pump is directly powered up from the indicator of the GM70 and has a simple on/off switch for operation. The GM70's battery allows the pump to be continuously used for 5 hours.

Like the diffusion-aspirated version, the GM70 pump option can be furnished with the Vaisala CARBOCAP® Carbon Dioxide Probe Series GMP220, which is also used in the GM220 series industrial transmitters and modules. The measurement range of the pump option can thus be changed simply by plugging in a different interchangeable probe.

The pump is a useful option in certain applications, since it enables sampling from places difficult to access. It also enables reliable comparison between fixed CO_2 instruments and recently-calibrated reference probes. For example, the pump can draw a sample from a duct through the sample draw port of the duct-mounted Carbon Dioxide Transmitter Series GMD20. The reading can then be compared to the reference probe to determine whether the transmitter under field check needs servicing.

Although the pump unit was originally developed mainly for the field checking of fixed Vaisala CO_2 transmitters, the version can also be used for other spot-checking applications. It is ideal for measuring CO_2 in narrow spaces such as small chambers. However, precautions must be taken when drawing air from humid environments, since the probe inside the pumping chamber must still be protected from condensation. The incubators and environmental chambers of laboratories, in particular, tend to be very demanding applications, since the gas sample is usually drawn from an environment with high temperature and humidity into room temperature. In this case, the removal of excess condensation from the sample might become an issue. A handy tool for removing excess humidity in short-term sample draws is the Nafion¨ membrane tubing, which is available as an accessory (Part No. 212807GM).

The GM70 indicator can be connected to the serial ports of all fixed CARBOCAP®-based CO_2 transmitters with the optional GMA70 cable. The GMA70 enables the user to display readings from the serial communication ports of the fixed CO_2 transmitters on the MI70. If this option is used together with the pump unit, the readings of the fixed transmitters can be easily compared with the GM70 in the field. When the meter is equipped with an accurate reference probe, it serves as a practical field checking device for fixed GM20 and GM220 series instruments. A carrying case designed for holding either the pump or the diffusion aspiration version incorporates all the necessary equipment for direct measurement. ●