Application Spotlight

# Precise $CO_2$ dosing for mosquito traps

Biogents

vögtlin instruments

# Highly efficient and precise $CO_2$ measurements

## The dosage of the mosquito attractant

**$CO_2$ is the most important attractant for most blood-sucking insects and must therefore be released from the mosquito trap in the correct dosage. Researchers need a flow regulator to be able to adjust this release precisely.**

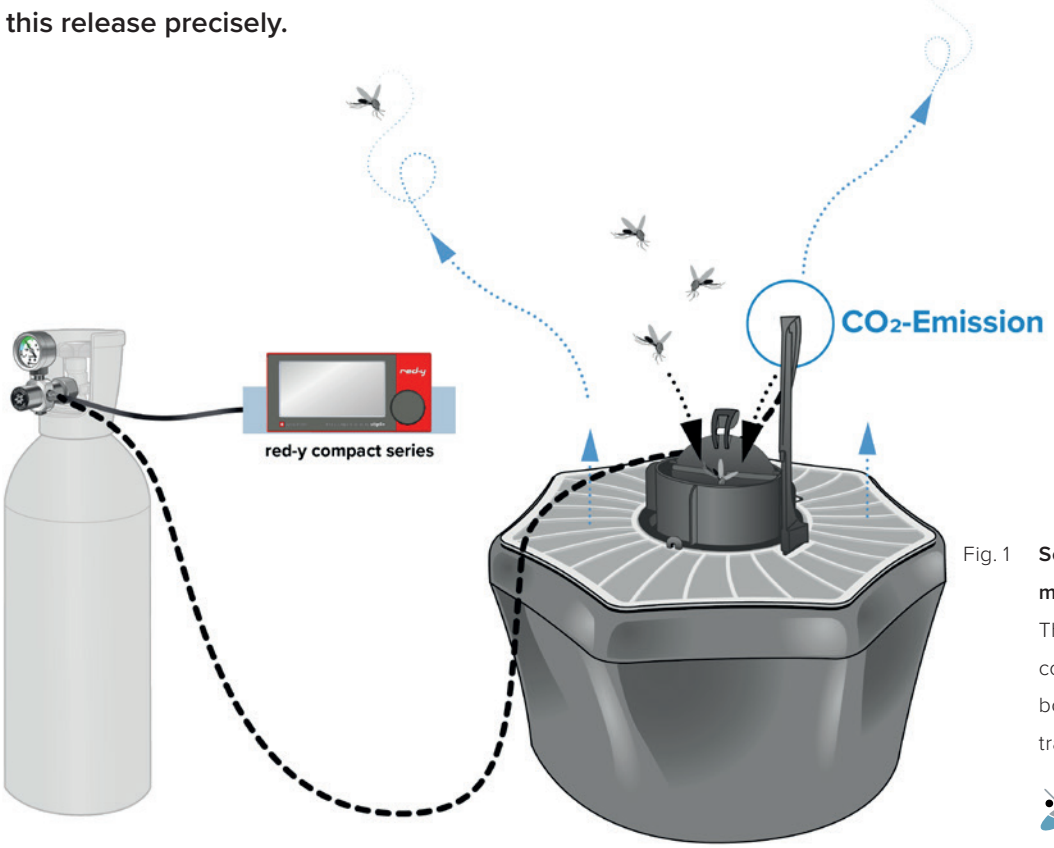


Fig. 1 **Schematic diagram of the mosquito trap**
The flow is connected before the connection between the $CO_2$ bottle and the Biogents mosquito trap.

Biogents


Fig. 2 **red-y compact series:**
The touch display offers intuitive navigation.
All device parameters can be set via the integrated menu.

### Application

Whether mosquitoes find us attractive does not - as is often claimed - depend on our ‘sweet blood’. Instead, mosquitoes orientate themselves on our breath and our skin scents. They are particularly sensitive to carbon dioxide ($CO_2$), which is a natural component of the air breathed by all vertebrates.

In the ambient air, the proportion is only 0.04%, whereas in human breath it is around 4%. An adult emits around one kilogramme of $CO_2$ every day. Mosquitoes in Central Europe and other temperate zones in particular - including house mosquitoes and flood mosquitoes - react strongly to this gas. Biogents mosquito traps therefore use $CO_2$ to efficiently attract mosquitoes. With a flow rate of just 170 mL/min (equivalent to around 0.5 kg per day), the mosquito catch rates of a trap equipped with an attractant can be increased fivefold. The attractant imitates the scent of skin and the $CO_2$ imitates the breath of a person, so to speak.

### The challenge

The challenge is to precisely regulate $CO_2$ dosing in mosquito traps. While a rough adjustment suffices for private households, accurate delivery is essential in research and professional trap networks. Variations in $CO_2$ flow rates between traps can distort comparative tests, and in networks, it must be ensured that each trap is optimally supplied. Additionally, $CO_2$ should be used efficiently to minimise costs without compromising its effectiveness as an attractant.


Fig. 3 Automatic alignment of the display by position sensor. Standard AA battery. Optional 24 VDC and micro USB power supply available

### Solution

The red-y compact flow meter provides a reliable means of accurately measuring $CO_2$ flow and gas consumption. With Vögtlin's cutting-edge MEMS mass flow technology, the device ensures fast response times and user-friendly operation thanks to its plug-and-play functionality.

Automatic temperature compensation guarantees high repeatability, while long-term stability is ensured through a clean and dry gas supply. Its compact design and operation with standard AA batteries make the device highly versatile and ideal for independent research projects.

Fig. 4 **A Biogents employee** checks the $CO_2$ gas flow with the help of a red-y compact

### Main features

- ★ Easy integration thanks to battery operation
- ★ Gas flow monitoring
- ★ Compact device with local LCD display
- ★ Independent of pressure fluctuations
- ★ High accuracy & dynamics
- ★ Display of actual value & total consumption
- ★ Cost-effective solution

### Areas of application

- ★ Gas consumption per consumer, laboratory
- ★ chemical industry
- ★ Building services engineering
- ★ Analytics
- ★ Medicine

### About Vögtlin Instruments GmbH

Vögtlin has been a member of the TASI Flow Group since 2011, which focuses on high-quality solutions in flow measurement and control technology. All TASI Flow products are developed, manufactured and maintained by technology centres in the USA, Switzerland, Germany and the UK. Strategically positioned calibration centres in Europe, Asia and the USA enable us to offer all services and application experience close to our customers.

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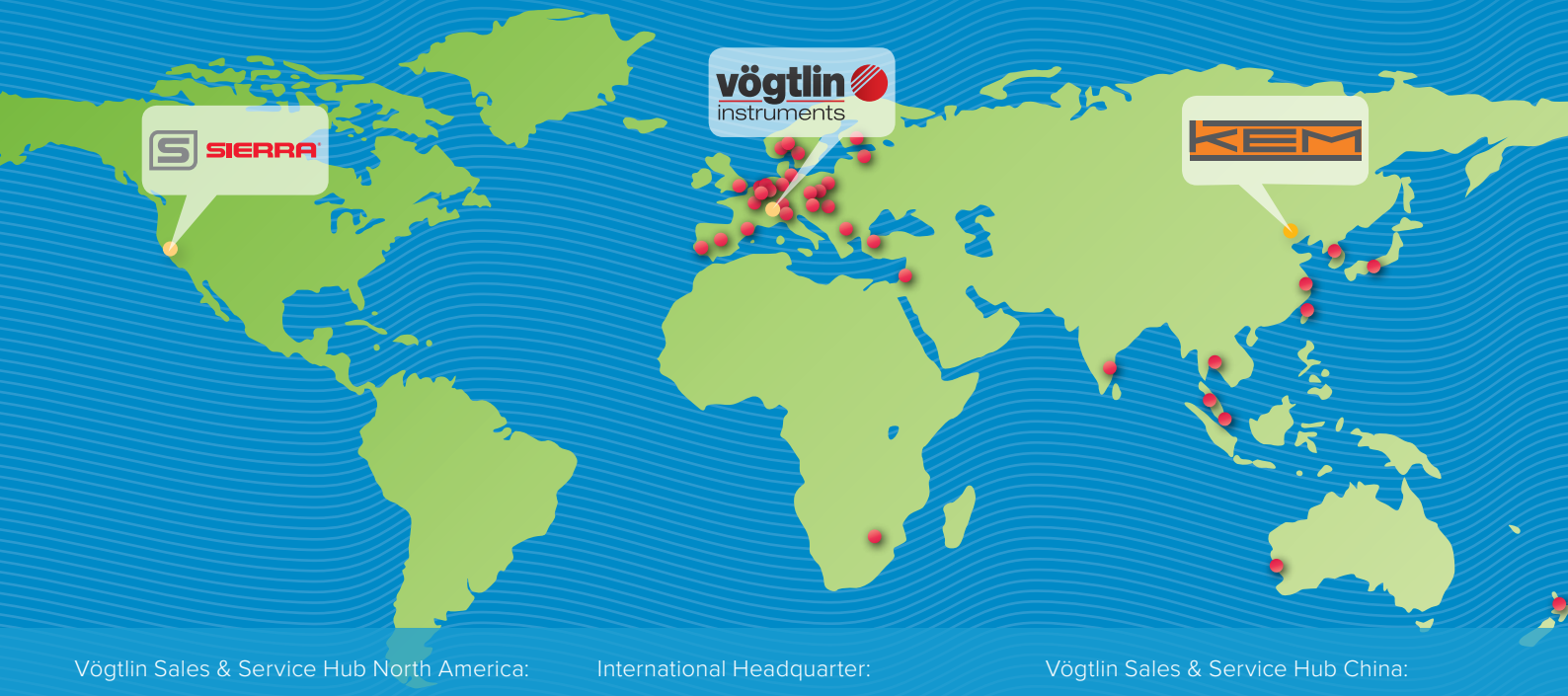
# Worldwide TASI Flow Network

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