



NEW

CO2-C14G2

Biogenic CO2 Sampler according to ISO13833:2013

METLAB



EMISSION MONITORING SYSTEMS
www.metlab.se



Precision CO₂ Sampling Solution

The METLAB CO₂-C14G2 sampler is designed for the accurate flow proportional sampling of CO₂ in liquid absorbents according to EN-ISO 13833:2013, enabling precise determination of the carbon ratio from biogenic and fossil origins in flue gases. Built to deliver reliability and ease of use, it is the ideal choice for industrial facilities and emissions laboratories.

Key benefits

Reliable Performance

Built for industrial environments, the unit ensures long-term dependability and accurate proportional sampling, even under variable gas flow conditions and long sampling periods.

Seamless Integration

Featuring analogue input and output signals, the sampler is easy to integrate with facility control systems, remote control of sampling and monitoring of sampling gas flow and O₂ levels for leak detection.

Intuitive Operation

A 5.7" touch display provides a simple, user-friendly interface that reduces training needs.

Compact and Versatile

Suitable for permanent or portable use, with wall-mount or tabletop options.

Safety First

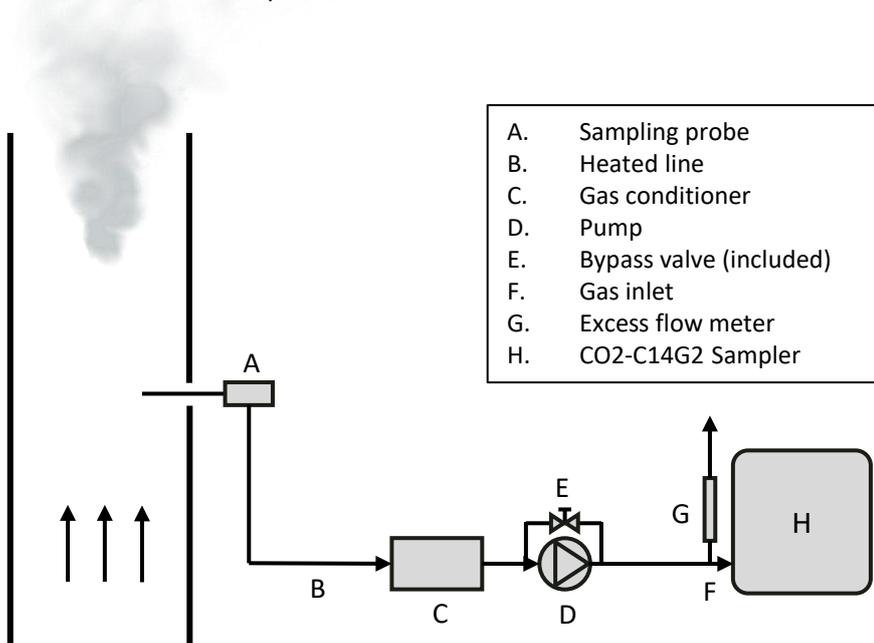
Absorption bottles are secured in locked stands within a stainless-steel cabinet to minimize risks.



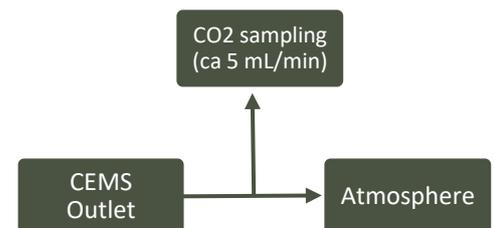
METLAB CO₂-C14G2

System overview

Flue gas is drawn via a heated sampling probe and line to a gas conditioner that removes moisture. A dedicated pump and bypass valve then regulate the sample stream to the CO₂ sampler, maintaining an excess flow of ca 0.5 L/min.



Optional setup

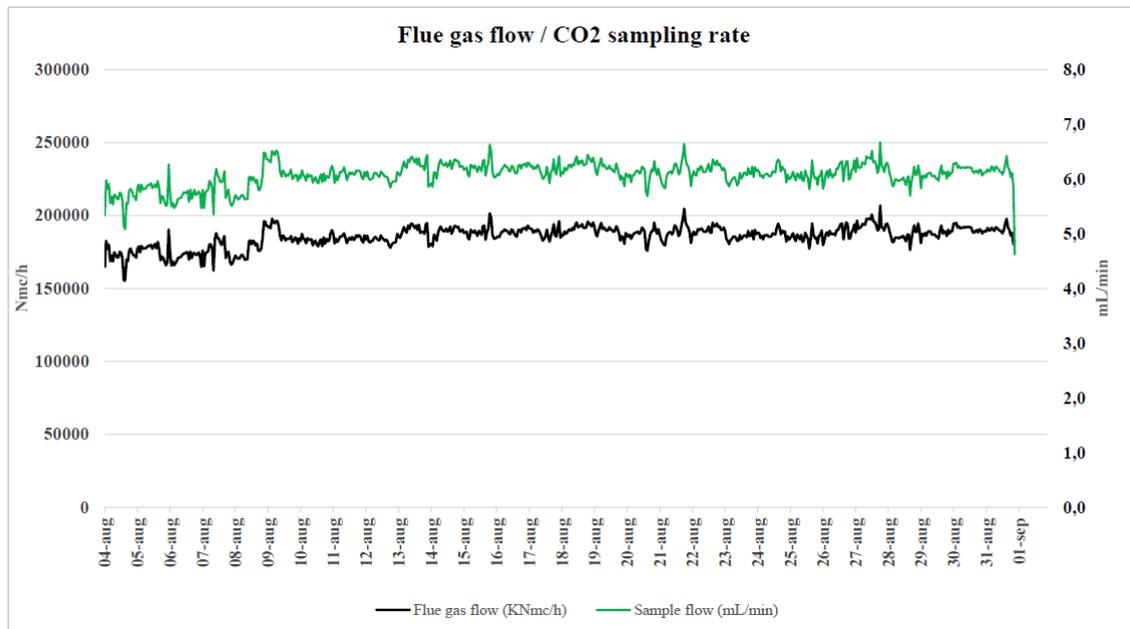


An optional downstream configuration leverages the existing CEMS outlet, provided the gas composition remains unaltered and the sampled stream is dry. While this approach offers a cost-effective solution, it introduces the drawback of sample interruption during CEMS maintenance or technical issues.

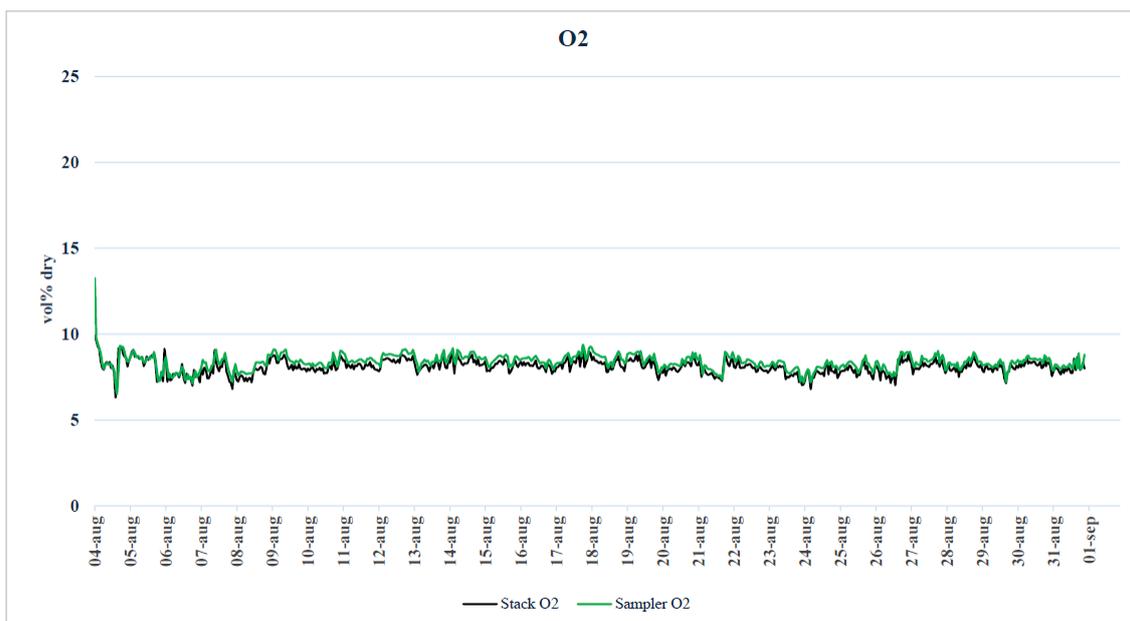
Example Performance Data

The following charts illustrate actual field performance of the C14G2 sampler at a Waste-to-Energy (WtE) facility, demonstrating precision compliance with the **ISO 13833:2013** standard.

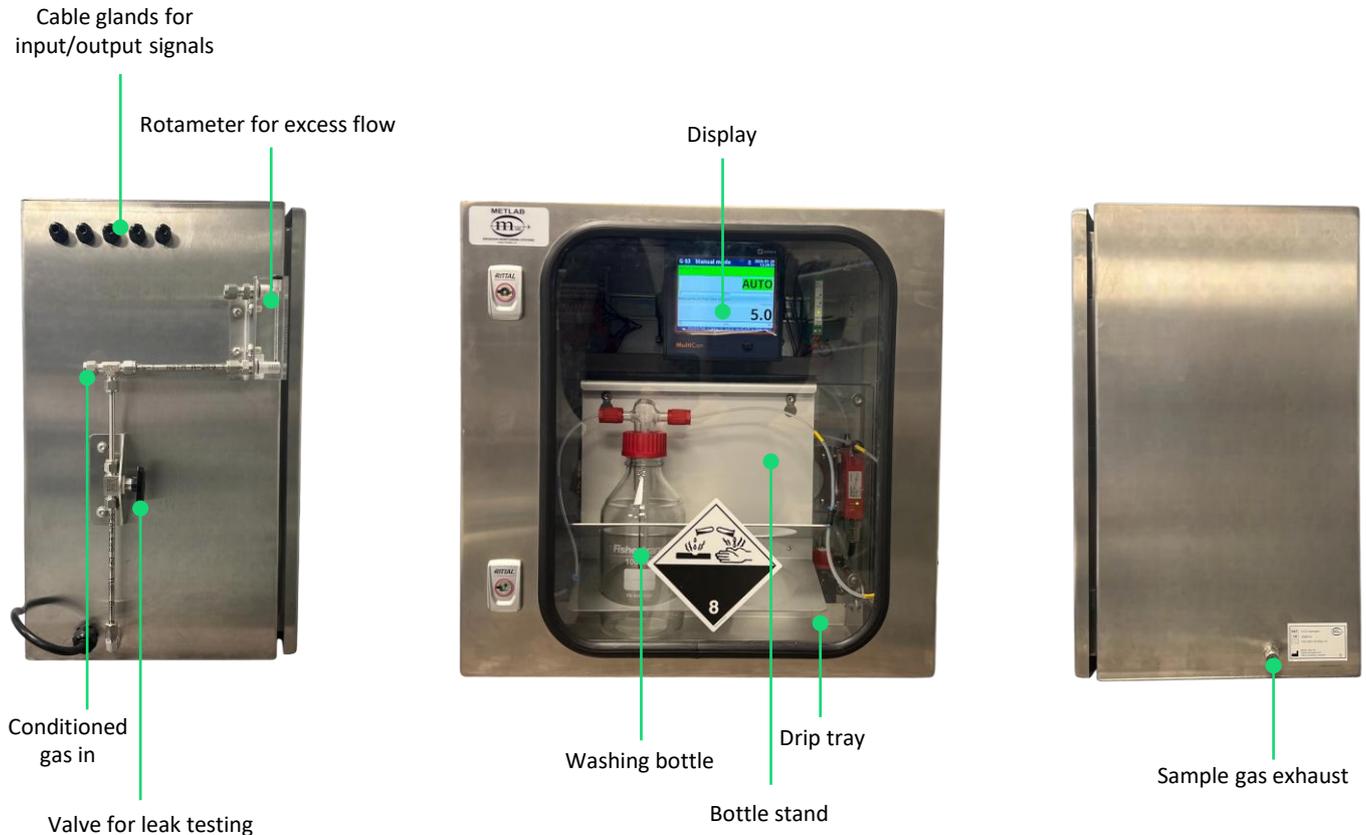
To ensure a representative biogenic CO₂ measurement, the sampler must precisely track flue gas flow. The chart below shows the **Sample Flow** (green) reacting instantaneously to fluctuations in **Flue Gas Flow** (black) and maintain proportionality throughout the sampling period. This high-resolution synchronization guarantees that your final lab sample is a true mathematical reflection of your plant's total emissions.



Air ingress can invalidate weeks or even months of sampling. The C14G2 provides real-time "peace of mind" by comparing the **Sampler O₂** levels against the facility's **Stack CEMS O₂**. By monitoring this alignment (as seen in the lower chart), operators can instantly detect leaks, preventing the high costs and regulatory headaches of an invalidated sample. The data is available both as an output signal (4-20mA) and on the screen.



Product overview



Technical Specification

Description	Specification
Dimension (W x H x D)	530 x 510 x 320 mm
Weight	15 kg
Operating temperature	0...+40°C
Storing temperature	-20°C...+50°C
Transport temperature	-20°C...+50°C
Relative humidity	20%...90%
Altitude	-300...2000m
Power requirements	100-240 V, 50/60Hz, 1A, Category II
Input signals (4-20mA)	<ul style="list-style-type: none"> Stack O₂ Flue gas flow
Output signals (4-20mA)	<ul style="list-style-type: none"> Leak detection O₂ Sampling rate
Remote On/Off	Relay

CO₂ Sampling and Biogenic Carbon Analysis

Equipment and Accredited Sampling Services

METLAB provides both **CO₂ sampling equipment** and **accredited sampling services** for determining the **biogenic and fossil fraction of CO₂ emissions**.

With more than **10 years of experience in ISO 13833:2013 accredited sampling**, we support customers from sampling through analysis and reporting.

Option 1 – Direct purchase

Operate your own sampling program using the **C14G2 sampler**.

We provide:

- Sampling equipment
- Absorbent preparation instructions
- Sampling protocols
- Data handling guidance

Option 2 – Full-service package

Our experienced technicians perform the sampling for you.

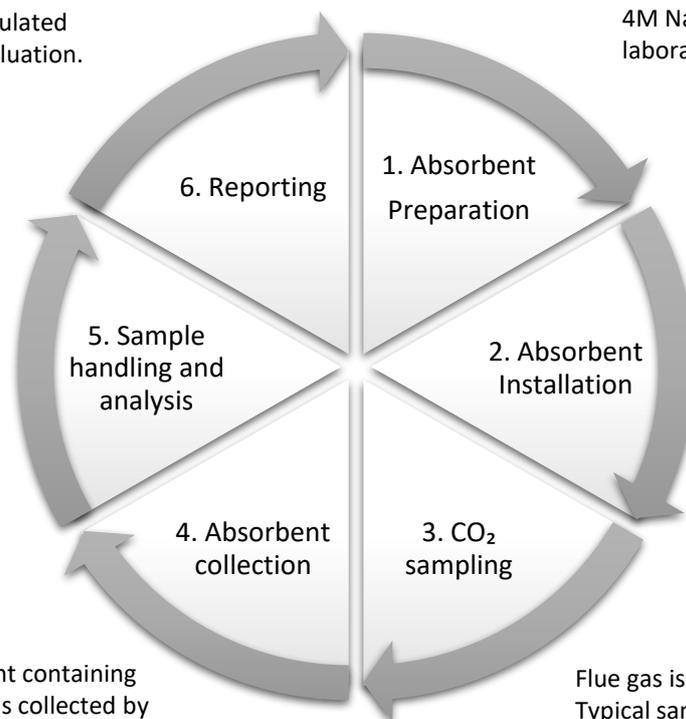
Services include:

- Absorbent preparation in controlled laboratory environment
- On-site installation of sampler
- Collection and handling of samples
- Radiocarbon (C14) analysis through accredited laboratory
- Evaluation of sampling performance
- Complete reporting

Full-Service Sampling Workflow

Biogenic/fossil CO₂ fraction calculated and reported with sampling evaluation.

4M NaOH solution prepared in a CO₂-free laboratory environment.



Prepared absorbent bottle installed in the C14G2 sampler.

- Sample divided into subsets and analyzed by an **accredited radiocarbon laboratory**.

Used absorbent containing captured CO₂ is collected by METLAB.

Flue gas is sampled continuously.
Typical sampling period: **1 month**.