NEW

CO2-C14G2

Biogenic CO2 Sampler according to ISO13833:2013

METLAB

EMISSION MONITORING SYSTEMS

www.metlab.se

CE

Precision CO_2 Sampling Solution

The METLAB CO2-C14G2 sampler is designed for the accurate flow proportional sampling of CO_2 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 O_2 levels for leak detection.

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

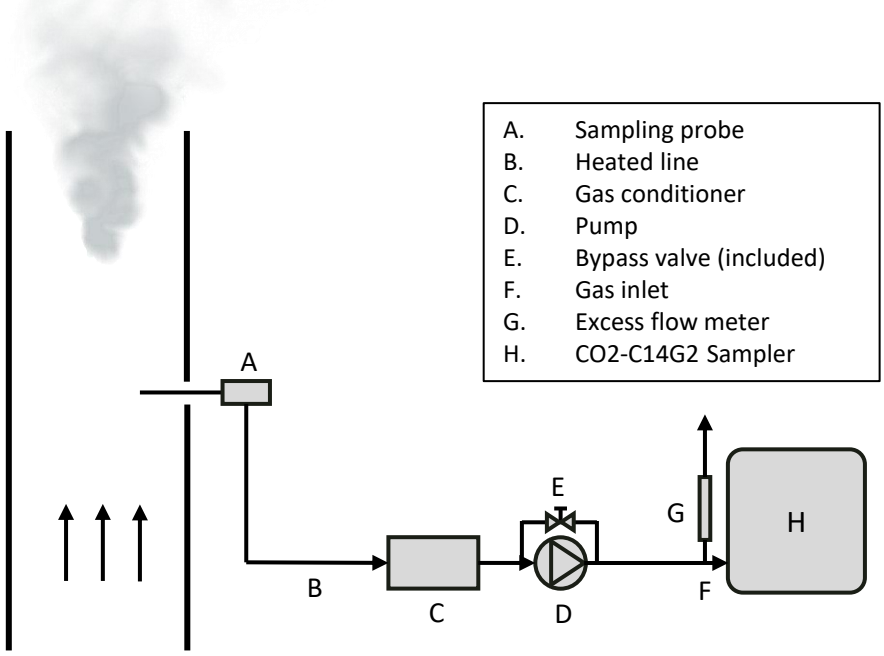
Compact and Versatile
Suitable for permanent or portable use, with wall-mount or tabletop options.

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

METLAB CO2-C14G2

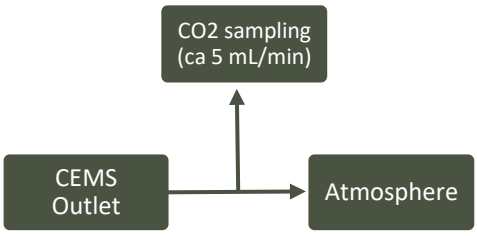
System overview

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 CO_2 sampler, maintaining an excess flow of ca 0.5 L/min.



A.	Sampling probe
B.	Heated line
C.	Gas conditioner
D.	Pump
E.	Bypass valve (included)
F.	Gas inlet
G.	Excess flow meter
H.	CO2-C14G2 Sampler

Optional setup

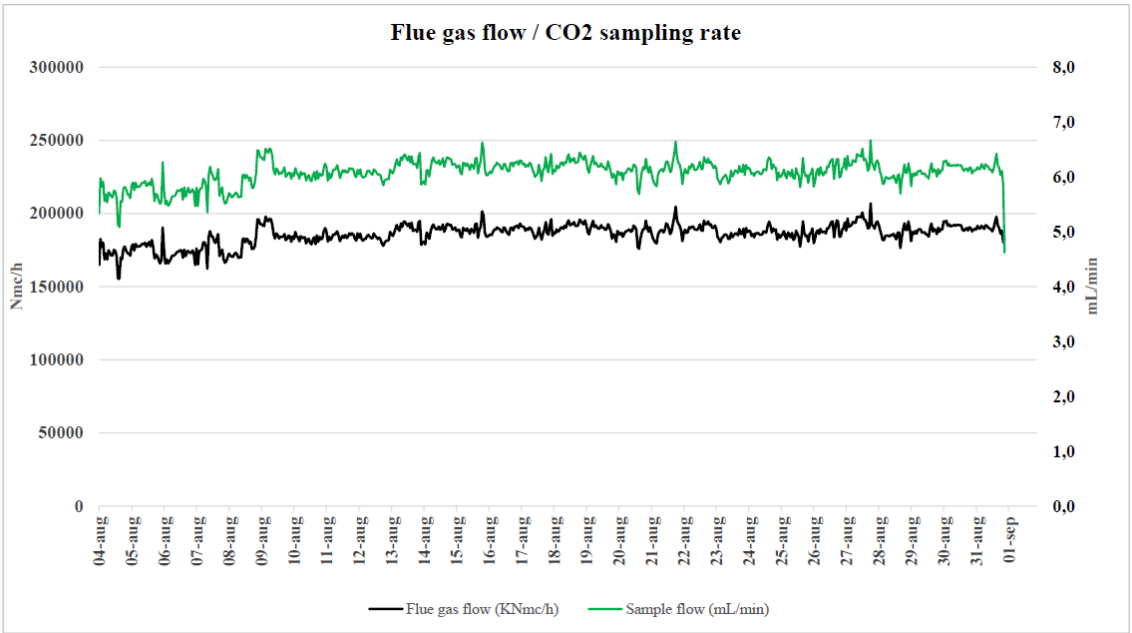


An optional downstream configuration leverages the existing CEMS outlet, provided the gas composition remains unaltered and the sampled stream is dry. While this approach offers a cost-effective solution, it introduces the drawback of sample interruption during CEMS maintenance or technical issues.

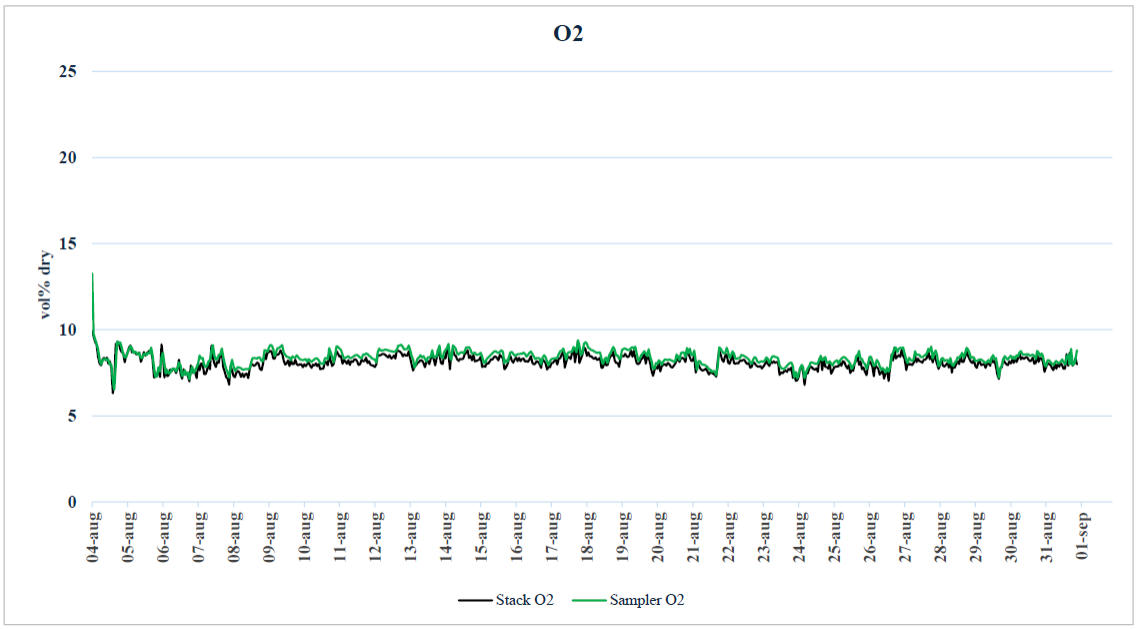
Example Performance Data

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.

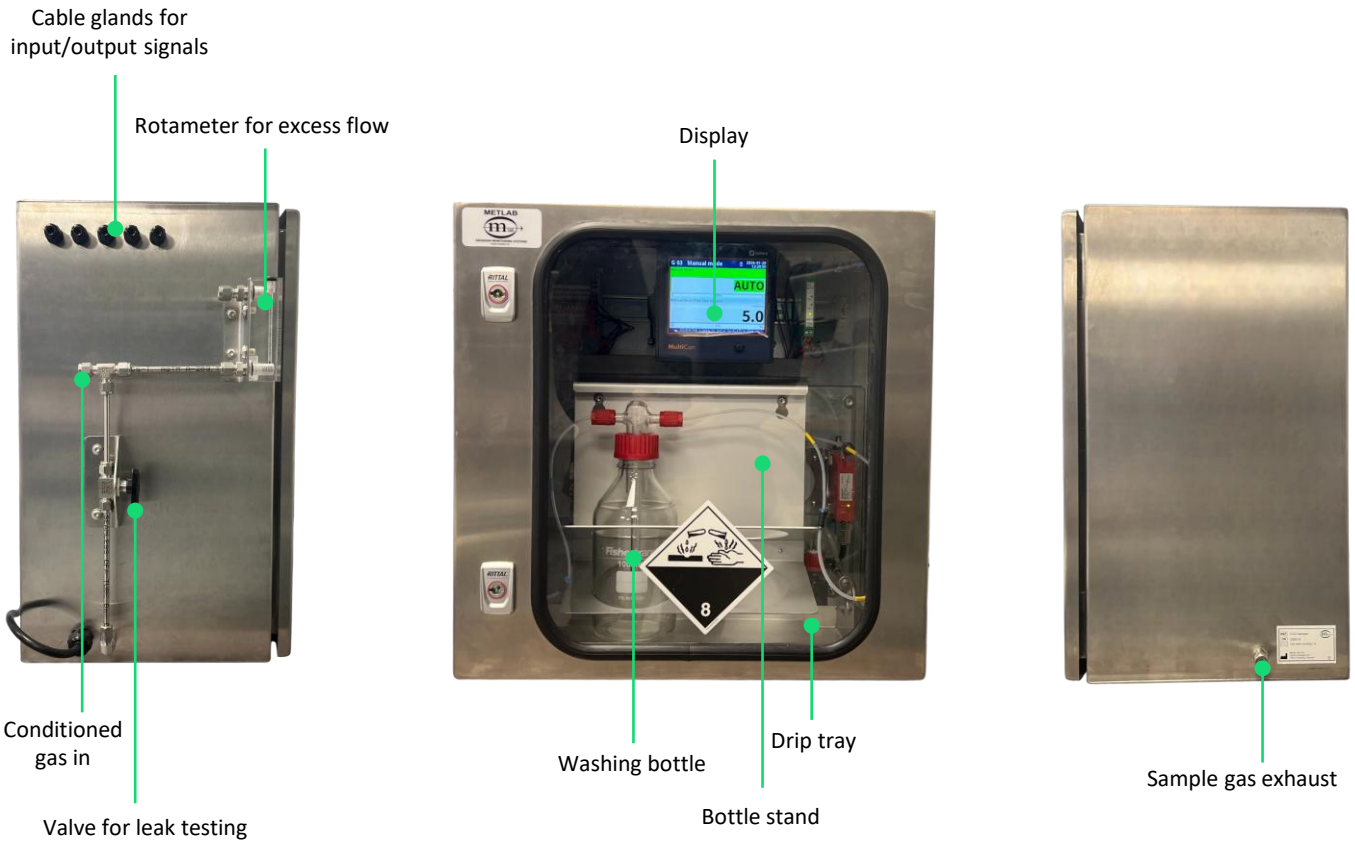
To ensure a representative biogenic CO_2 measurement, the sampler must precisely track flue gas flow. The chart below shows the **Sample Flow** (green) reacting instantaneously to fluctuations in **Flue Gas Flow** (black) and maintain proportionality throughout the sampling period. This high-resolution 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 O_2** levels against the facility's **Stack CEMS O_2**. 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

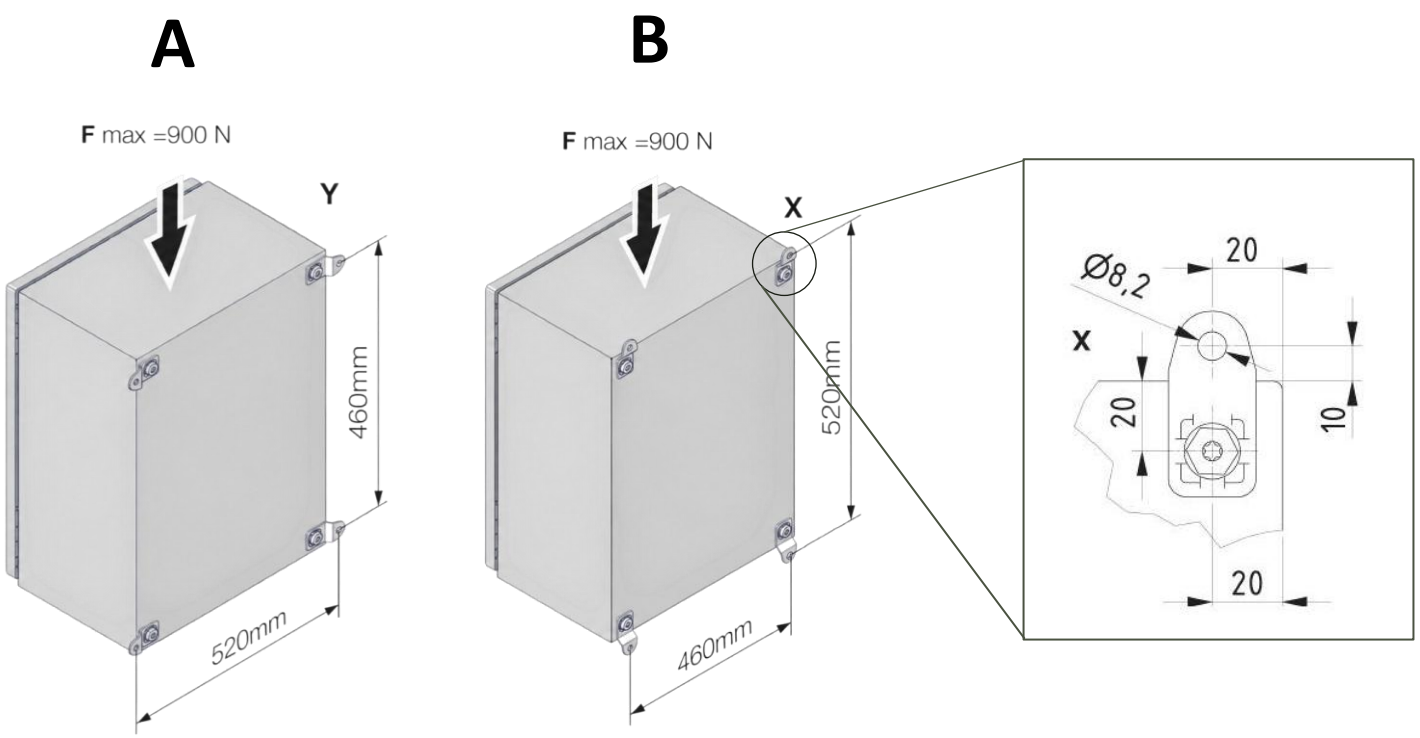


Technical Specification

Description	Specification
Dimension (W x H x D)	560 x 500 x 300 mm (excl. wall-mount)
Weight	17 kg
Operating temperature	0…+30°C
Storing temperature	-20°C…+50°C
Transport temperature	-20°C…+50°C
Relative humidity	20%...90%
Altitude	-300…2000 m
Power requirements	100-240 V, 50/60Hz, 1A, Category II
Gas connections	Swaglok 6 mm compression fittings
Input signals (4-20mA)	• Stack O2 • Flue gas flow
Output signals (4-20mA)	• Leak detection O2 • Sampling rate
Remote On/Off	Relay

Installation

Wall-mount
Dimensions for wall-mounting are as stated below (configuration A or B) and is delivered based on customer request. The dimensions are C-C (centre-to-centre between bracket holes).



Portable use
For portable use, the unit can be ordered with rubber feet and a carrying handle instead of wall mounts.

Electrical connection
The sampler is delivered as standard with a 2 m power cable terminated in a CEE 7/4 ("Schuko", Type F) plug.
On customer request, the cable can be supplied with an open end for hard-wiring or in a different length.
For signal interfacing, screw terminals are pre-installed inside the cable glands of the unit for easy installation.
External interface signal cables are not included.

⚠ **Caution:** Electrical installation and any modification of the power cable termination must be carried out by qualified personnel in accordance with applicable national electrical regulations.

CO_2 Sampling and Biogenic Carbon Analysis

Equipment and Accredited Sampling Services

METLAB provides both CO_2 sampling equipment and accredited sampling services for determining the biogenic and fossil fraction of CO_2 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

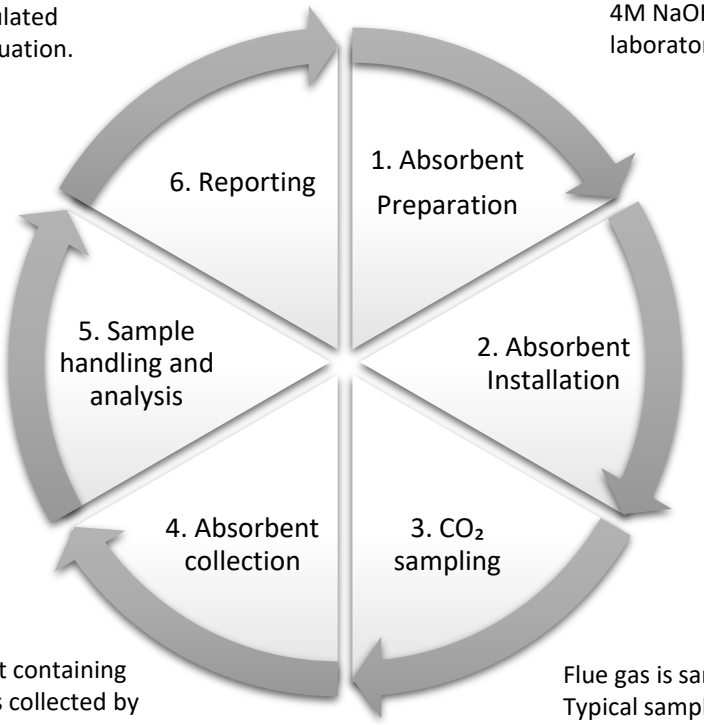
Option 2 – Full-service package

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

4M NaOH solution prepared in a CO_2-free laboratory environment.



Prepared absorbent bottle installed in the C14G2 sampler.

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

Used absorbent containing captured CO_2 is collected by METLAB.

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

Biogenic/fossil CO_2 fraction calculated and reported with sampling evaluation.