Measuring Methane Emissions Introduction

November 2025

ANALOX

Your Challenge, **Our Passion**

Methane Reduction Innovation

Daffodils to Data

Background

- Dancing with Daffodils is a project aimed to develop a naturally sourced nutritional additive
- Funded by DEFRA and Innovate UK
- Aim to reduce methane emissions from ruminants

Analox Involvement

- Design a precise and reliable gas sensor capable of detecting multiple gases - methane, CO2, H2, ammonia and O2.
- Ensure integration to existing workflows
- Provide easy access to data

Methane Reduction Innovation

From Concept to Reality

Detecting what matters

Measuring 5 key gases:

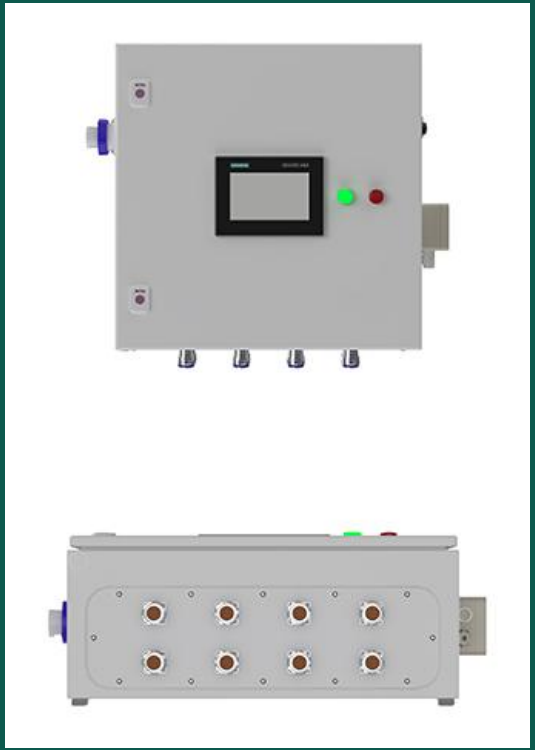
- Methane (CH_4)
- Carbon dioxide (CO_2)
- Oxygen (O_2)
- Hydrogen (H_2)
- Ammonia (NH_3)

Methane Reduction Innovation

From Concept to Reality

Central Display Module

- PLC and HMI
- Control for all components in the system
- Displays triggering values, speed of pumps and sensor values



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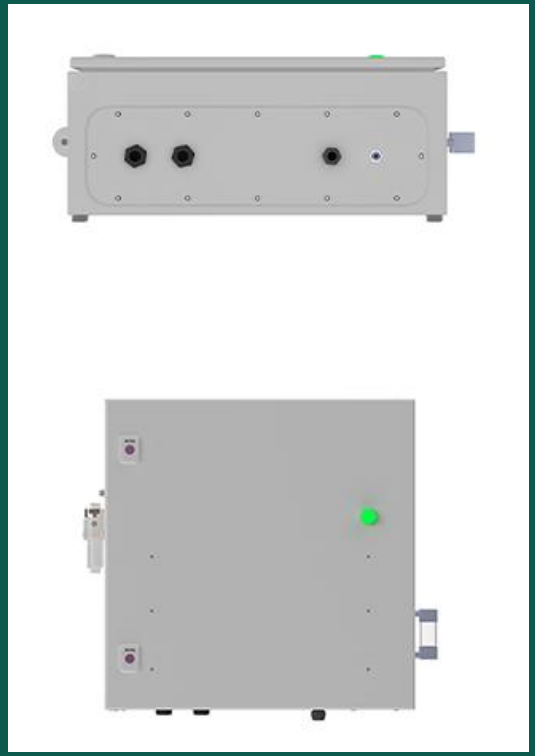
From Concept to Reality

Sample Acquisition Module (SAM)

- Filter and capture cow’s breath
- Move sample to Tedlar bag
- Hold sample to be moved forward when ready.



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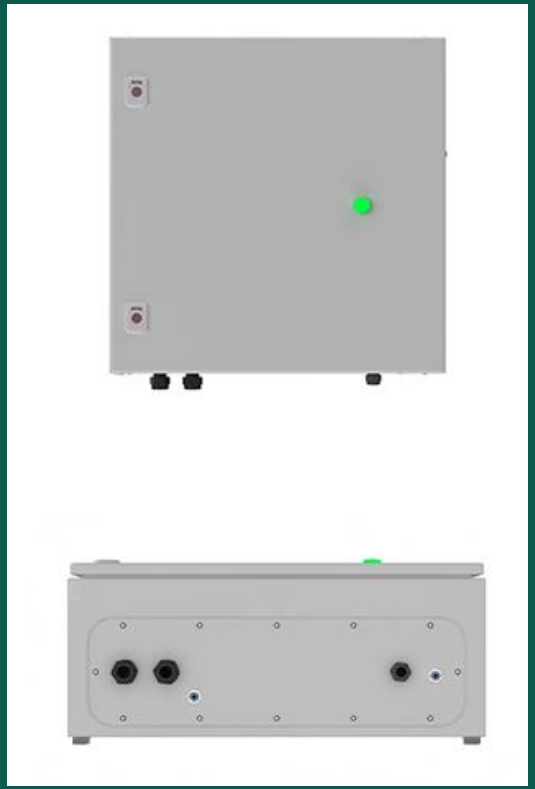
From Concept to Reality

Sensor Expansion Module 1 (SEM 1)

- Connects to SAM unit

- Methane (CH4)
- Carbon Dioxide (CO2)



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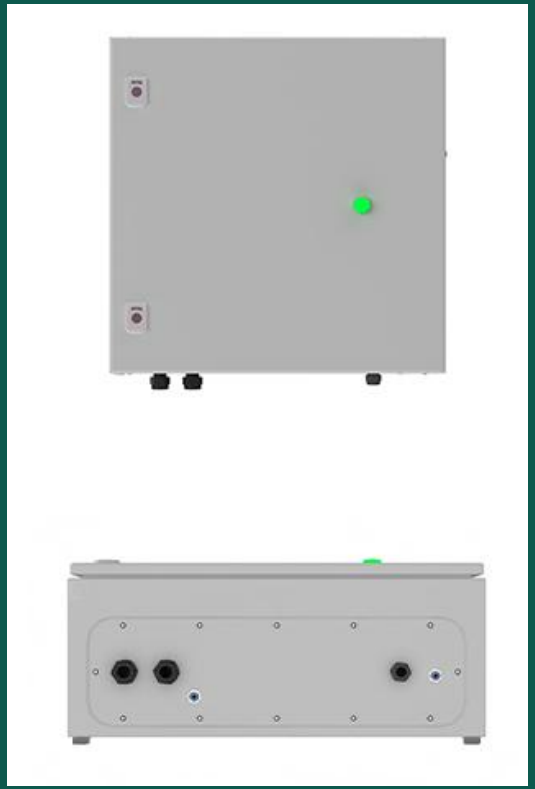
From Concept to Reality

Sensor Expansion Module 2 (SEM 2)

- O2
- H2



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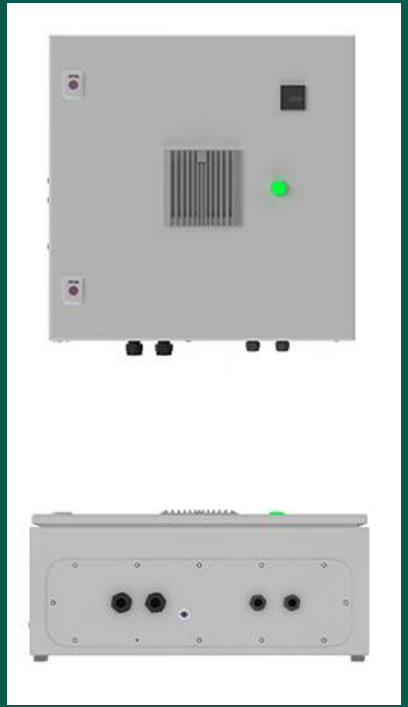
From Concept to Reality

Sensor Expansion Module 3 (SEM 3)

- Ammonia (HN3)
- Collects through heated sample line



Methane Reduction Innovation

From Concept to Reality

Thank you