



GREEN ENERGY HUB

UNDERSTANDING CONTINUOUS EMISSIONS MONITORING SYSTEMS



**PROCESS
INSTRUMENT
SOLUTIONS**

WHAT IS CEMS AND WHY DO WE NEED IT?

Continuous Emissions Monitoring Systems
explained.



WHAT IS CEMS?

A **Continuous Emissions Monitoring System (CEMS)** is a sophisticated technology used to continuously collect, record, and report data on gas emissions from industrial processes. It typically measures pollutants such as:

- Carbon monoxide (CO)
- Carbon dioxide (CO₂)
- Sulfur dioxide (SO₂)
- Nitrogen oxides (NO_x)
- Particulate matter
- Volatile organic compounds (VOCs)
- Oxygen (O₂)

WHO NEEDS CEMS?



POWER PLANTS & UTILITIES

CHEMICAL & PETROCHEMICAL

REFINERIES

WASTE INCINERATION

CEMENT & GLASS MANUFACTURING

STEEL & METAL PROCESSING

HOW DOES A CEMS WORK?

CEMS uses a combination of sensors, analysers, data acquisition systems, and software to:

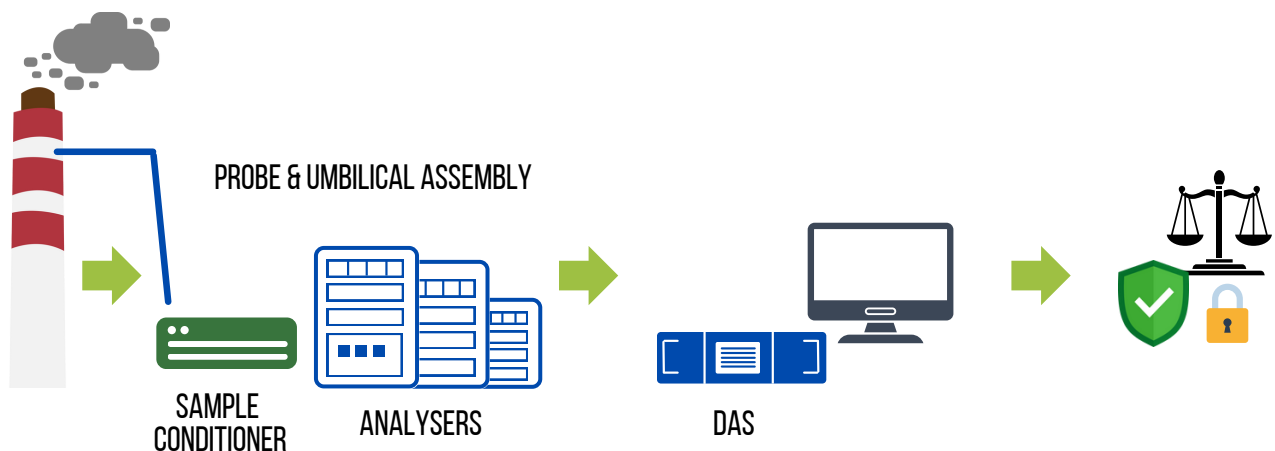
Continuously measure gas concentrations directly from flue gas stacks or ducts.



Analyse the collected emissions data in real time



Report the emissions values automatically to operators and, when needed, to environmental regulatory agencies.



WHY DO WE NEED CEMS?



REGULATORY COMPLIANCE- Governments and environmental agencies enforce strict emission standards. CEMS helps ensure that your operations stay within legal emission limits, avoiding hefty fines, shutdowns, or legal consequences.



ENVIRONMENTAL RESPONSIBILITY- By actively monitoring emissions, CEMS supports sustainability goals and helps companies reduce their environmental footprint.



OPERATIONAL OPTIMISATION- Data from CEMS can be used to optimise combustion efficiency, improve process control, and reduce fuel usage — saving money and resources.



TRANSPARENCY & REPORTING- CEMS enables real-time and historical reporting, which helps build public trust, improves ESG (Environmental, Social, Governance) ratings, and provides evidence of compliance.



RISK REDUCTION- Early detection of abnormal emissions helps prevent equipment failures, safety risks, and environmental hazards.



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