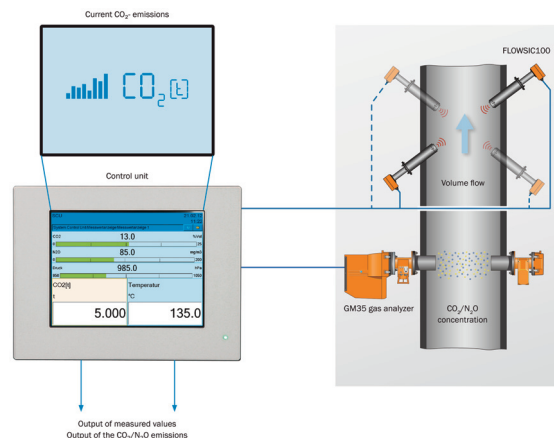


Integrated in-situ Measuring System for Greenhouse Gases

Pay Only for the Exhaust Loads Which are Actually Emitted

With a unique complete solution, SICK, the leading measurement technology specialist and worldwide manufacturer, helps companies save CO₂ certificate costs, duties and taxes on greenhouse gases. The company's in-situ GHG-Control measuring system supplies highly precise CO₂ and N₂O values directly from the air exhaust duct. Until now, greenhouse gas emissions could not be directly measured. Rather, they were calculated using complicated methods and safety premiums. Thus, the values tended to be on the high side.

“ Until now, however, emission values have been determined retroactively by regularly sampling and analysing different material flow patterns, e.g. coal and ash, as well as performing discontinuous laboratory analyses. The values determined from this analysis method tended to err on the side of caution, specifying a larger pollutant fraction. ”



The emission of greenhouse gases is becoming an ever greater cost factor for industrial operations. Internationally, companies are facing the additional expense of certificates which they use to buy emission rights. In addition, a number of countries are collecting (and continually increasing) taxes and duties on emitted greenhouse gases. Companies must be able to precisely measure their emissions in order to ensure they do not overpay.

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Measure rather than calculate greenhouse gases

GHG-Control, SICK's new complete system fills the gap. With GHG-Control, companies can now directly measure in the moist exhaust gas under actual process conditions. For companies, this means exact, real values at any time - even for changes of fuel composition and plant's operation modes. This makes GHG-Control the perfect solution for reliable exhaust gas monitoring and precise reporting.

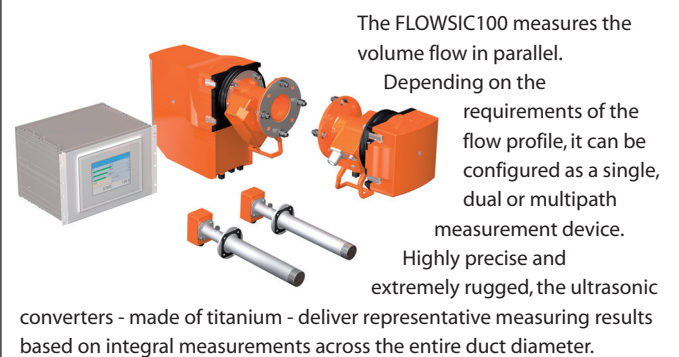
The innovative GHG-Control combines two in-situ products from SICK: the GM35 gas analyser and the FLOWSIC100 ultrasonic flowmeter, which thus far have been used mainly for volume calculations in gas pipelines.

Two in-situ products innovatively combined

The GM35 simultaneously and exactly records (deviation of $\leq 2\%$) the concentrations of CO₂ and N₂O. It can also be optionally supplied with a CO channel in order to calculate equivalent values for CO₂ in this way. The gas meter is also able to record temperature and pressure. The GM35's receiver unit



and the reflector on the exhaust gas duct are mounted opposite each other. The light beam traverses the duct cross-section twice, thereby increasing the measuring precision. Alternatively, the GM35 can be supplied with a measuring probe for attachment on one side only. The device can also record temperature and pressure and, due to its integrated self-testing and control functions, requires low maintenance.



An integrated self test and control functions make both devices very reliable and stable in the long-term.

The control unit in the GHG-Control complements the accurately measured concentrations with the precise volume flow values in comparison to the total quantity of the greenhouse gas being measured. The current measured values and volumes are available to the plant operator at any time.

Lower environmental, working and operating costs

GHG-Control reduces environmental costs for companies by providing precise data without safety premiums. Companies pay only for pollutant amounts that have actually been emitted. The sampling, analysis and maintenance expenditure can now largely be omitted, thus saving labour and material costs for the plant operator. The pollutant checks also facilitate a real-time optimisation of the plant's operating mode.

GHG-Control from SICK can be utilised worldwide in every industry. For this, SICK offers consulting, configuration and implementation - all from a single source.



SICK
Sensor Intelligence.