

ENOTEC – Solutions for gas analysis in cement plants



CEMTEC® – For extreme conditions

The CEMTEC® gas sampling system has been developed for continuous flue gas analysis in cement kiln inlet chambers and in other extremely dusty high temperature processes. Increasing the efficiency of pyro processes and ecological sustainability are

global requirements and can be implemented with CEMTEC®. CEMTEC® is designed to endure the increased trend to use alternative fuels.

These advantages have been confirmed by our customers:

- Decreased ammonia consumption due to improved SNCR efficiency
- Reduced fuel consumption due to higher combustion efficiency in the rotary kiln and in the calciner
- Lower emissions due to reduced fuel consumption and continuous emissions monitoring
- Higher refractory lining durability due to lower CO emissions
- Lower maintenance of the cyclones and riser duct due to reduced material build-up
- 95% availability of measurement data enables continuous process control and monitoring

Our promise:

ENOTEC will find a solution for every application, whether customized or from our standard production.

We are able to do this due to our dense network of factory trained distributors, our highly skilled personnel and our reliable and experienced service employees:

Around the clock and around the world.

Our wide range of products and the possibility to execute custom-made projects, directly in-house, enables us to find the right solution for every application. Long-lasting and to the highest satisfaction of our customers.

DASTECS S.R.L.

Representantes / Distribuidores Exclusivos

Argentina

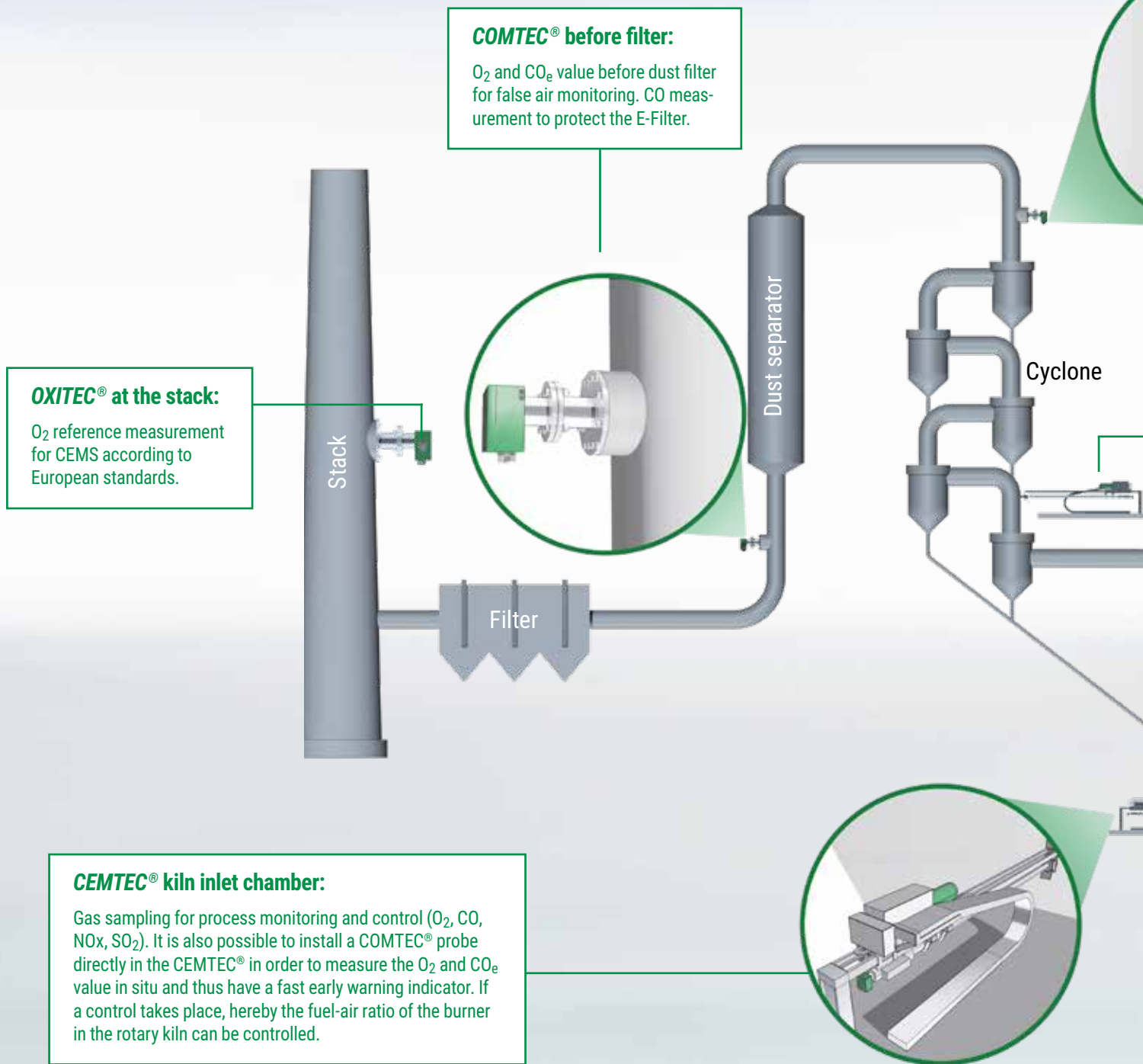
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GAS SENSING SOLUTIONS SINCE 1980

ENOTEC – Measuring points in cement plants

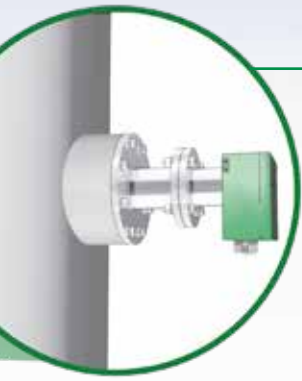


The process of cement production is characterized mainly by the extreme conditions: Extremely high temperatures and high dust loads.

In order to operate the process efficiently and with a minimum of emissions, quick and reliable measurements are essential.

Especially the measurement in the kiln inlet chamber at the end of the rotary kiln is important since the excess O₂ content in the flue gas can be measured as close as possible behind the burner (approx. 2,000 g / m³ dust).

The water cooled sampling probe CEMTEC® is installed at the kiln inlet where sample gas is constantly extracted from the pyro-process of the rotary kiln (availability of measurement of 95%).



COMTEC® after cyclone:

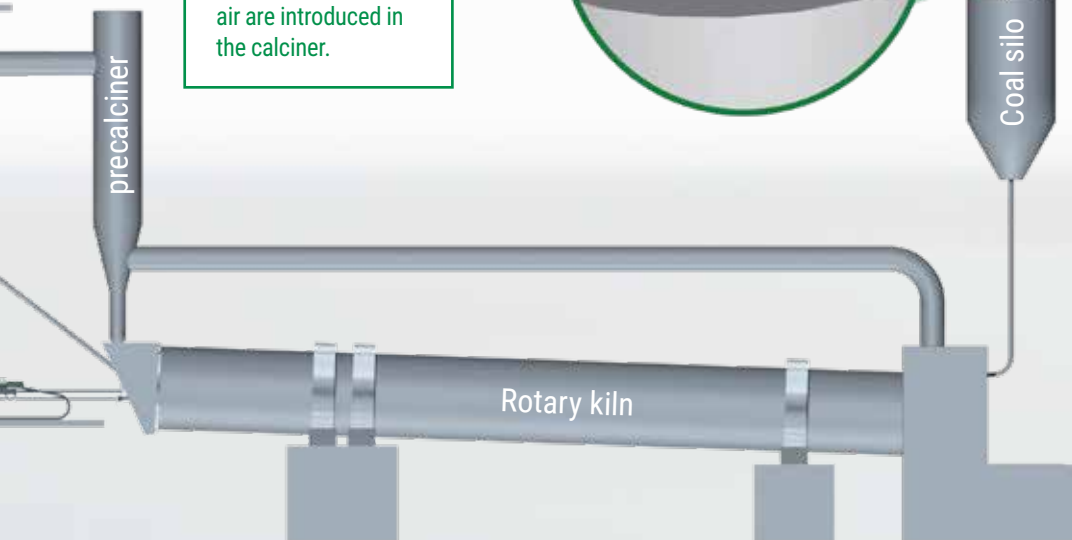
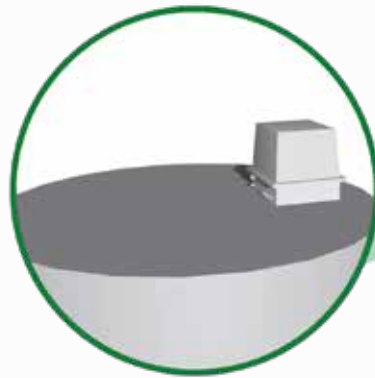
Process monitoring and control by measuring the O₂ and CO_e values, as fuel (alternative fuels) can be entered at the precalciner.

OXITEC / COMTEC DustEX in coal grinding plant

Monitoring of inert operation for preventing the spontaneous combustion / explosion of coal dust. The O₂ value must be kept low to keep the process inert. The optional CO_e sensor provides added security and reliability (additional information can be found in the Application Note coal grinding plant).

CEMTEC® behind calciner:

Gas sampling for process monitoring and SNCR control (O₂, CO, NO_x, SO₂). Monitoring and control as fuel and air are introduced in the calciner.



SILOTEC® in the coal dust silo:

Since air is in the silo, there is a constant possibility of formation of smouldering fires, possibly leading to the risk of explosion. If the CO value exceeds a limit, an alarm is triggered. The O₂ value determines the inertness of the silo.

Downstream of the precalciner, at somewhat lower temperatures but with similarly high dust loads and higher flue gas velocity, CEMTEC® is used for measurement.

At the measuring points for thermal fuel preparation, flue gas cleaning and chimney, OXITEC® 5000 (O₂ InSitu measurement) and COMTEC® 6000 (O₂ / CO_e in situ measurement), are used in order to obtain

reliable and fast measurements for process control and monitoring.

Process stages in the cement plant:

- Rotary kiln: clinker formation (sintering)
- Precalciner: completion of calcination
- Cyclone: drying, preheating and a limited calcination of the raw meal

ENOTEC – Products for cement plants



CEMTEC® 4000

- Temperatures up to 1400 °C and dust load up to 2000 g / m³
- Continuous measurement data with 95 % availability
- Low maintenance operation
- Pneumatic plunging, rotation, moving of the probe!
- O₂ and CO_e InSitu sensors optionally integrated



OXITEC® 5000 & COMTEC® 6000

- Fast O₂-/CO_e in situ measurement in real time
- Durable probes, resistant against abrasion, corrosion and dust
- Full 2 year warranty on the sensors
- Certified measurement according to QAL1 and SIL 2
- Also available for ATEX Zones 1/2 & 21/22



COMTEC® 6000 DustEx

- Certified for use in ATEX Zones 21 & 22
- Fast InSitu monitoring of the coal grinding plant
- O₂ measurement to determine inert operation
- CO_e measurement detects potentially hazardous conditions
- Functional safety: certified to SIL 2



SILOTEC® 8000

- Fast smoldering fire and inertisation monitoring in silos
- Direct CO measurement for ATEX Zone 20
- Plug & Play complete solution for silo operators
- Functional safety: certified to SIL 2
- Automated self-diagnosis and cleaning



SIL2

EAC



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