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## SENSORS AND SYSTEMS FOR COMBUSTION ENGINEERING



Development - Production - Sales - Service

Combustion optimisation  
Sensor systems and analysis



Sales Partner Worldwide.



## Combustion optimisation – sensor systems and analysis

### O<sub>2</sub> measuring IT1 LS1



- » High-end O<sub>2</sub> measuring
- » Fully automatic calibration with ambient air
- » Applicable up to 1400 °C
- » TÜV approval for emission monitoring
- » Easy to use and low-maintenance

### O<sub>2</sub> measuring IT2 LS2



- » Universal O<sub>2</sub> measuring
- » Semi- and fully automatic calibration
- » Applicable up to 450 °C
- » Detection of CO/H<sub>2</sub> (COequivalent)
- » O<sub>2</sub> control integrated

### O<sub>2</sub>/CO<sub>e</sub> measuring IT3 KS1D



- » Combined O<sub>2</sub> and CO/H<sub>2</sub> measuring
- » Measuring directly inside flue gas
- » Applicable up to 450 °C
- » Independent of leak air (COequivalent)
- » Ex design

### CO<sub>e</sub> detection CarboSen1.000ST



- » Detection of unburnt CO/H<sub>2</sub> (COequivalent)
- » Low power consumption
- » Applicable up to 450 °C
- » Fast response time T<sub>60</sub> < 2 s
- » Easy to mount, compact design



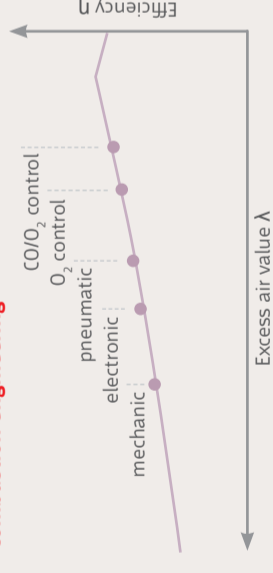
### Efficient – Low-emission – Environmental-friendly

Already since decenniums, the O<sub>2</sub> control helps saving energy in industrial combustion processes. This control is based on measuring residual oxygen content inside exhaust gas. Leak air can influence measuring results, affecting functionality, efficiency and safety of the control.

The combination probe KS1D detects unburnt (oxidisable) elements of flue gas (CO/H<sub>2</sub>), allowing the detection of the edge between complete and incomplete combustion.

In LAMTEC fuel/air ratio controls, the CO/O<sub>2</sub> control automatically optimises the fuel/air ratio. A short response time, compensation of disturbance variables and failure-safety are benefits of the LAMTEC CO/O<sub>2</sub> control.

#### Combustion engineering



Fuel/air ratio control with/without O<sub>2</sub> and CO/O<sub>2</sub> control

### Adaptive combustion optimisation by the use of CO/O<sub>2</sub> control

