

# COMTEC<sup>®</sup> 6000 O<sub>2</sub> / CO InSitu Analyser Systems



Maximum Efficiency and Supreme Quality  
for the World Market

**ENOTECH**

# COMTEC® 6000 The World's First InSitu O<sub>2</sub> and CO (Combustibles) Analyser

COMTEC® 6000 is a totally new and unique InSitu Oxygen & CO (Combustibles) flue gas and process gas analyser. The innovative combustibles sensor pioneered and developed by ENOTEC (patent pending), combines with its world-proven "leak-proof" Zirconia Cell technology to produce the worlds first InSitu O<sub>2</sub> & CO analyser.

Both measuring cells, (O<sub>2</sub> & CO), are actually located inside the process measuring actual real-time values without

the need for sampling, conditioning and expensive hybrid systems. The COMTEC® 6000 probe simply installs directly inside the duct for direct & continuous dual readings of Oxygen & CO present. COMTEC® 6000 can easily be installed as standalone instrument or as a retrofit upgrade to an existing system. It's designed to be maintenance free, with minimal calibration requirements, and completely user-friendly operation.

## Measuring principle of the ZrO<sub>2</sub>-sensor for O<sub>2</sub> measurement

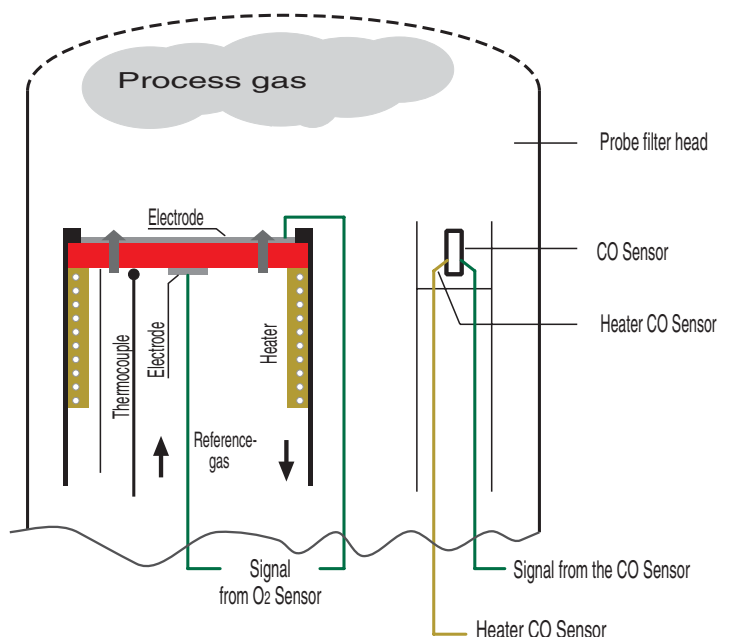
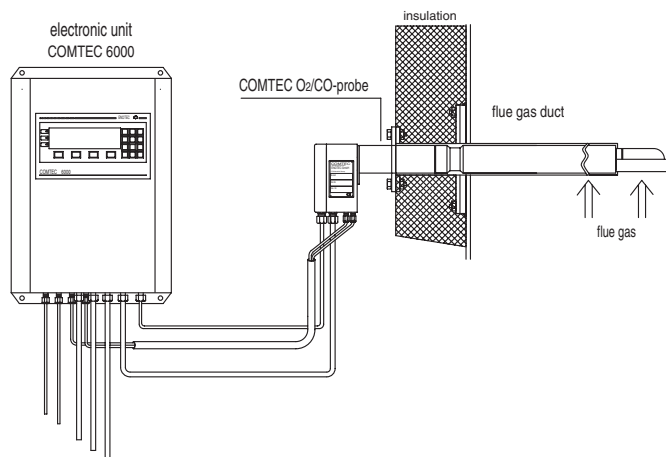
The mV signal produced by a temperature-stabilised Zirconia cell indicates the amount of oxygen concentration. Measurement is made direct and InSitu, i.e. the measuring cell is inside the flue gas duct at the end of the COMTEC® probe.

The measuring cell consists of a small zirconium-oxide disc, which is coated with porous layers of platinum on both sides and soldered with a gas-tight seal into the end of a steel tube cell holder. The temperature of the measuring cell is stabilised by a built-in heater whose temperature is kept constant by a temperature controller. At a constant measuring cell temperature the mV-output of the cell correlates - according to the Nernst equation - with the O<sub>2</sub> content.

## Measuring principle of the Ga<sub>2</sub>O<sub>3</sub>-sensor for CO measurement

In general, a metal oxide sensor consists of an active layer, which resistance changes when exposed to the gas being measured. This changing of resistance is gripped by electrodes and it is proportional to the CO concentration. This unique semiconductor gas sensor is operated at high temperatures approx. 750°C. Ga<sub>2</sub>O<sub>3</sub> sensors show faster response times and lower cross sensitivities than other sensors. Additionally, Ga<sub>2</sub>O<sub>3</sub> based sensors show stable long-term sensor properties even in flue gases containing of sulphur and dirt. Furthermore, the sensor has an excellent measurement repeatability.

### System configuration



Probe filter head

# Advantages of the COMTEC® 6000 Analysing System:

- Both measurements are made truly InSitu without sampling
- Versions available for Installation in Safe or Hazardous locations
- Ideal for all fuels: Coal, Oil, Gas and Waste Products.
- Easy installation & calibration
- Measuring Range: programmable by customer
- High Accuracy
- Twin (O<sub>2</sub> & CO) LCD SME5 electronic simultaneous displays.
- Fully field serviceable & repairable
- Full 2-Year Warranty program.

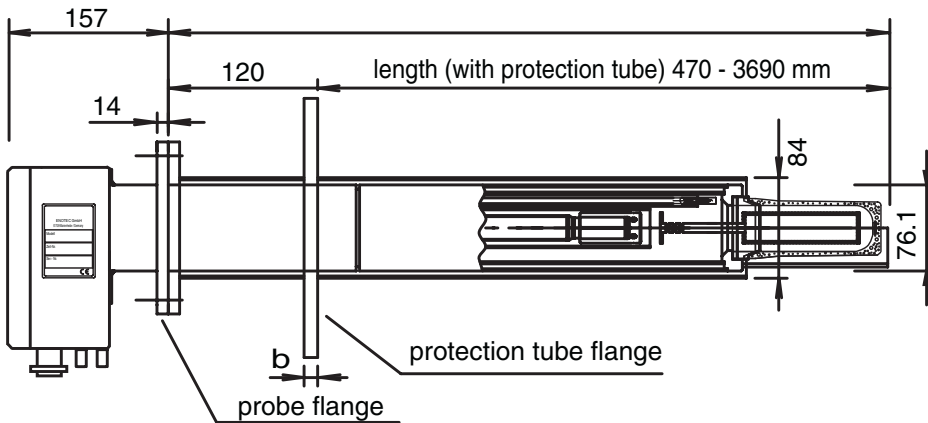


## Technical Data:

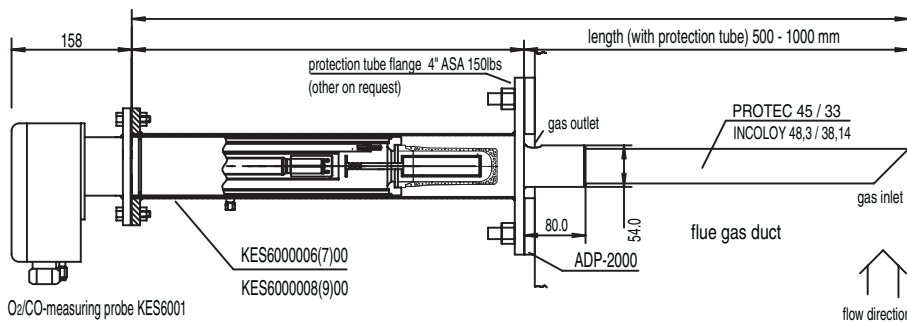
Dimensions:: see dimension drawings  
 Mains voltage: 115 - 230 V/50 to 60 Hz tolerance +/-10%  
 Power consumption: 400 VA during heating up  
 100-200 VA during operation  
 Series fuse recommended: 10 A  
 Flue gas temperature: < 600°C  
 < 1400°C with gas cooling tube  
 Ambient temperature: -20 °C to +55 °C  
 other temperatures on request  
 Immunity from disturbance: European low voltage general directions:  
 EN 50081-2 / EN 50082-2  
 Relay outputs: floating: 230 V- 5 A resistive load  
 Resolution of A/D converters: 14 Bit + sign

Analogue input of thermocouple: Re: >900 kilo Ohm  
 Temperature compensation: Electronic  
 Signal outputs 0/4 to 20 mA: Load max. 500 ohm, potential-free  
 Response time of mA output: < 175 ms  
 Display: LCD, LED-illuminates,  
 240 x 64 points, graphic display  
 RS 232, RS 485, bus compatible  
 Interfaces:  
**Measuring Range:**  
 Oxygen: 0 - 2 % / 25 % O<sub>2</sub> (others on request)  
 CO (Combustibles): 0 - 500 ppm / 10,000 ppm (others on request)  
 High Accuracy: Oxygen +/- 0.2% of reading, min. 1 ppm O<sub>2</sub>  
 CO (Combustibles) +/- 2 % of reading or  
 max. +/- 25 ppm CO

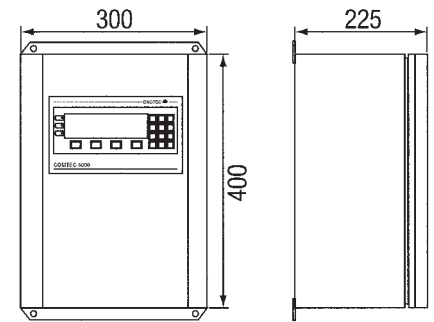
### COMTEC® 6000 Probe (for max. 600° C)



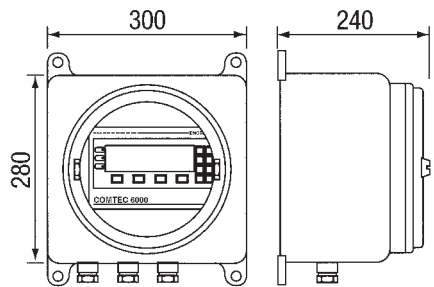
### COMTEC® 6000 Probe (for max. 1400° C)



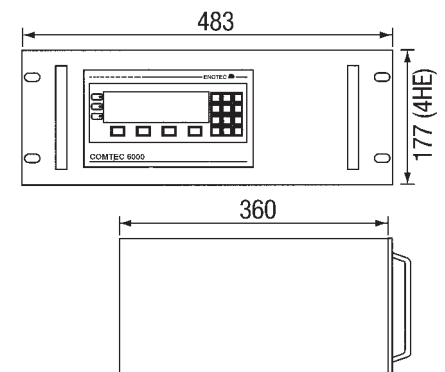
### Sheet steel panel housing



### Explosion proof housing EExd II C T6

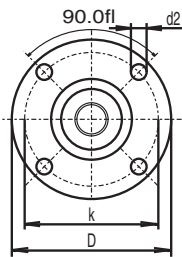


### 19" slide in module



### Flange options for COMTEC® 6000 measuring probe - Dimensions of protection tube flange in mm

protection tube flange



Mat.: 1.4571

Artikel-No.	0-R-000974	0-R-000972	0-R-000973	0-R-000971	0-R-000975	0-R-000976	0-R-000977
flange type	ANSI 4 B 150 LB	DIN 2527 DN65/PN16	DIN 2527 DN65/PN6	ANSI 2" 150 lbs	DIN 2527 DN50/PN16	ANSI 3" 300 lbs	für 1; 1,5; 2 m ZFG2 standard probe
D	228,6	185,0	160,0	153,0	165,0	209,5	165,0
b	12,0	12,0	12,0	12,0	12,0	12,0	12,0
k	190,5	145,0	130,0	121,0	125,0	168,3	140,0
d2	19,0	18,0	14,0	20,0	18,0	22,2	12,5
number of holes	8	4	4	4	4	8	6
letter in order form	A	B	C	D	E	F	G

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ENOTEC policy is one on continuous product improvement, and therefore, serves the right to change specifications and information as required without prior notice.

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