COMTEC® 6000 O_2 / CO_e
InSitu Analyser Systems

Maximum Efficiency and Supreme Quality for the World Market

ENOTEC

COMTEC® 6000 The World's First InSitu O_2 and CO_e (Combustibles) Analyser

COMTEC® 6000 is a totally new and unique InSitu Oxygen & CO_e (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 world's first InSitu O_2 & CO_e analyser.

Both measuring cells, (O_2 & CO_e), 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_e present in the process. 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_2-sensor for O_2 measurement

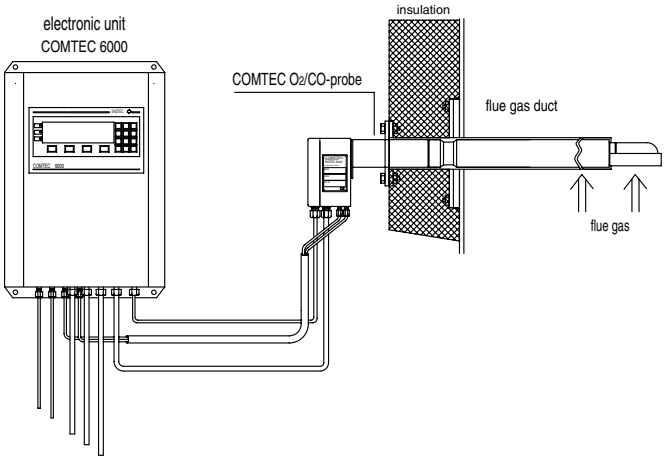
The mV signal produced by a temperature-stabilised Zirconia cell indicates the amount of oxygen concentration. Measurement is made direct and InSitu, i.e. the measuring cell is inside the flue gas duct at the end of the COMTEC® probe.

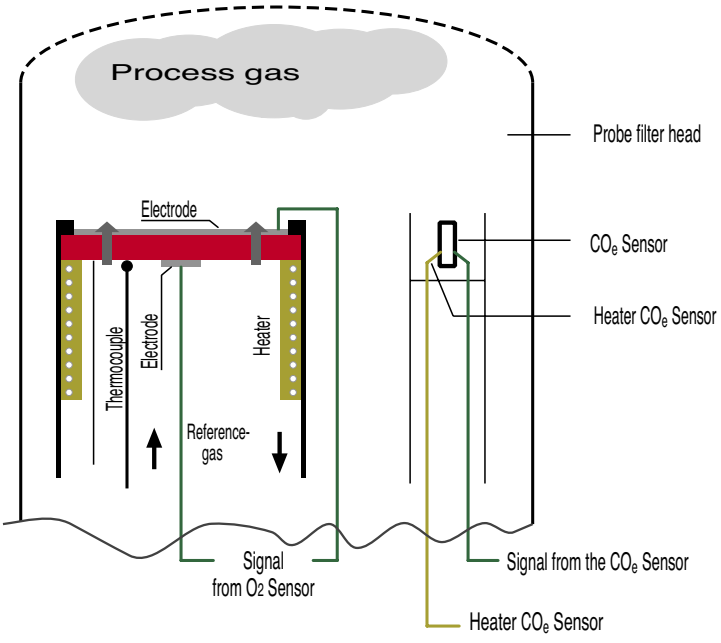
The measuring cell consists of a small zirconium-oxide disc, which is coated with porous layers of platinum on both sides and soldered with a gas-tight seal into the end of a steel tube cell holder. The temperature of the measuring cell is stabilised by a built-in heater whose temperature is kept constant 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_2 content.

Measuring principle of the Ga_2O_3-sensor for CO measurement (CO_e = total combustibles)

In general, a metal oxide sensor consists of an active layer, which resistance changes when exposed to the gas being measured. This change of resistance is detected by electrodes and is proportional to the CO_e concentration. This unique semiconductor gas sensor is operated at high temperature at approx. 750°C. Ga_2O_3 sensors show faster response times and lower cross sensitivities than other sensors. Additionally, Ga_2O_3 based sensors show stable long-term sensor properties even in flue gases containing sulphur and dirt. Furthermore, the sensor has an excellent measurement repeatability.

System configuration





Probe filter head

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Advantages of the COMTEC® 6000 Analyser System:

- Both measurements are made truly InSitu without sampling
- Versions are 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 (O2 & CO_e) LCD SME5 electronic simultaneous displays.
- Fully field serviceable & repairable
- Full 2-Year Warranty program.

System configuration:
KES6002 with electronic analysis technology
in sheet steel panel housing SME-53

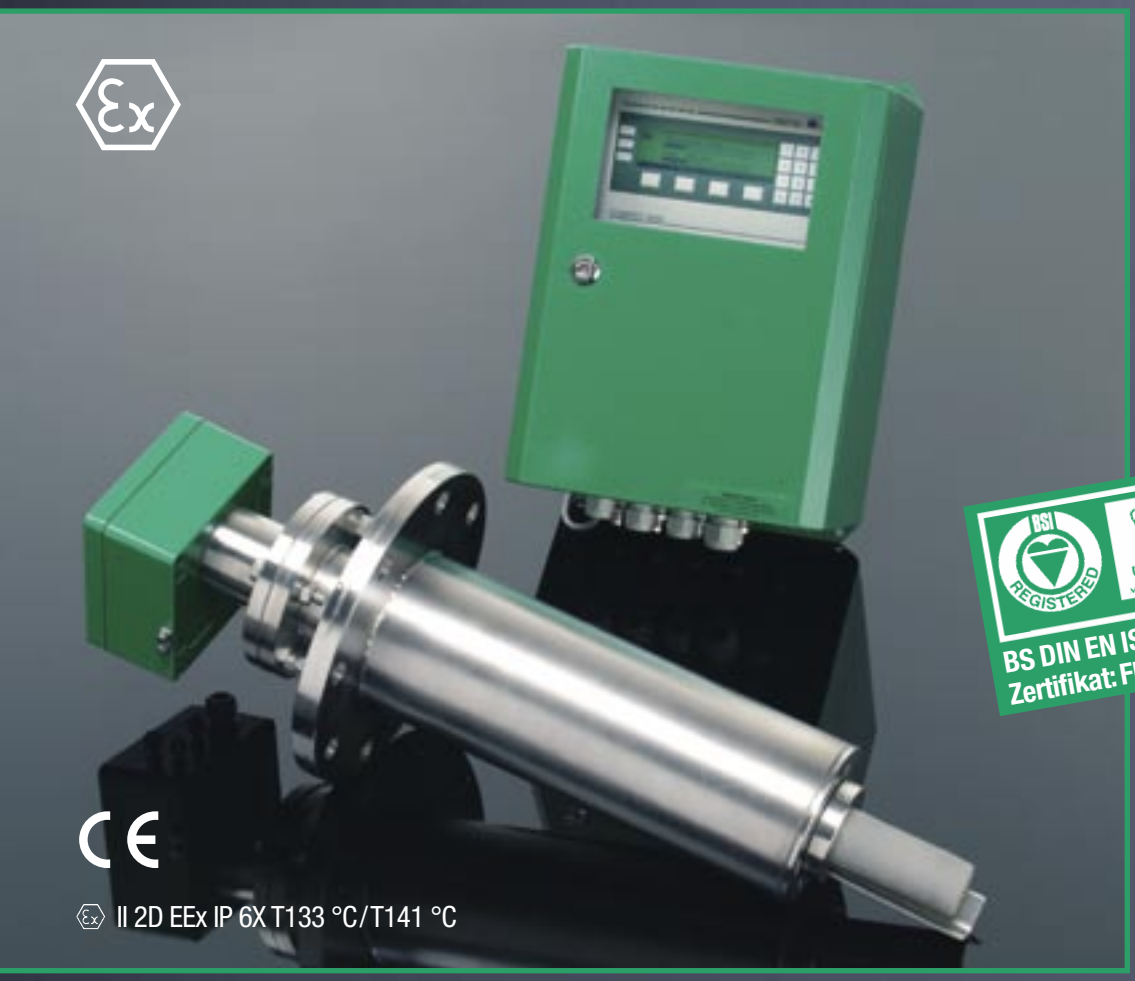
BS DIN EN ISO 9001
Zertifikat: FM 52247

ATEX/EXAM

Competence and experience with many thousands installed analysers world-wide in all processes and applications, some of witch are listed below:

- Power generation
- Waste incineration
- Iron and steel
- Inert processes
- Foodstuffs
- Chemicals industry
- Petrochemicals industry
- Cellulose
- Paper
- Cement
- Glass

COMTEC® 6000 Analyser Systems for Dust-Ex Zones 21/22



System configuration:
KES6001 Dust-Ex with electronic analysis technology in sheet steel panel housing SME-53...

BS DIN EN ISO 9001
Zertifikat: FM 52247

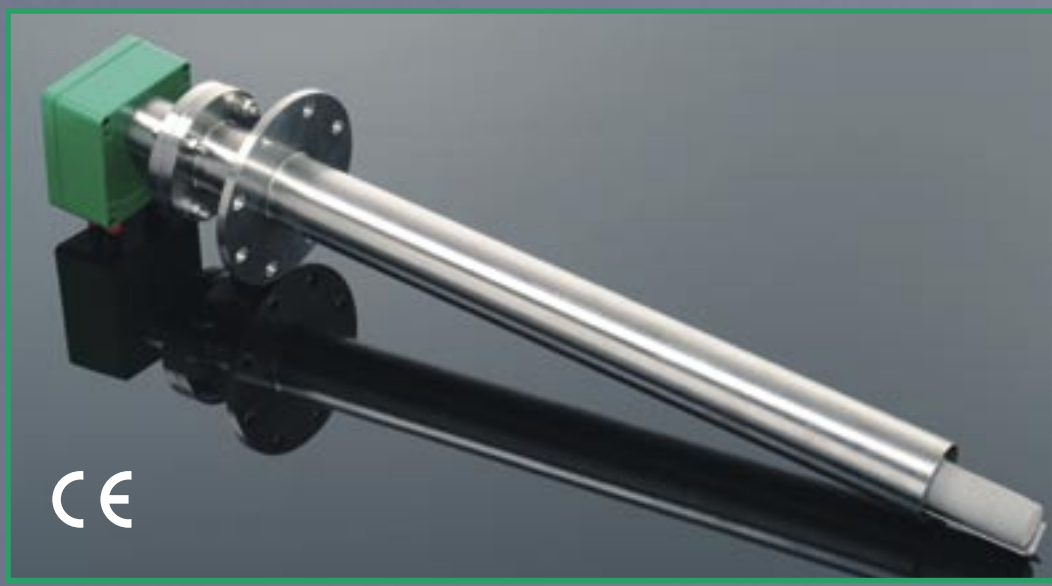
ATEX/EXAM

COMTEC® 6000 for Gas-Ex Zones 1/2

System configuration:
KEX6001 Gas-Ex with electronic analysis technology in explosion proof housing SME-5D...

COMTEC® KES600x Analyser Systems - The Optimum for the World Market

Flue gas temperature:	to 600 °C to 1400 °C (with gas cooling tube)
Insertion length:	470 mm (KES6001) 930 mm (KES6002) 1850 mm (KES6003) 2770 mm (KES6004) 3690 mm (KES6005) other lengths on request
Ambient temperature:	- 40 °C to + 80 °C



COMTEC® KES600x Dust-Ex Analyser Systems

Flue gas temperature:	to 600 °C
Insertion length:	540 mm (KES6001 Dust-Ex) 960 mm (KES6002 Dust-Ex)
Ambient temperature:	- 20 °C to + 70 °C

COMTEC® KEX600x Gas-Ex Analyser Systems

Flue gas temperature:	to 500 °C to 1400 °C (with gas cooling tube)
Insertion length:	430 mm (KEX6001 Gas-Ex) 890 mm (KEX6002 Gas-Ex) other lengths on request
Ambient temperature:	- 20 °C to + 70 °C

COMTEC® 6000 - Analyser Systems

Version in explosion proof housing ⟨Ex⟩ II 2 G EEx d IIC T6 (ambient temperature -20 °C to +55 °C)

Dimensions:	see dimensional drawings
Mains voltage:	230V/50 to 60Hz tolerance ±10% 115V/50 to 60Hz tolerance ±10%
Power consumption:	400 VA during heating up 100 - 200 VA during operation
Series fuse recommended:	10A
Ambient temperature:	-20 °C to +60 °C see housing version
Interference resistance:	to EMC regulations Low Voltage Regulation 72/73 EWG EN 50081-2: Juli 1993 EN 50082-2: März 1995
Relay outputs, potential free:	24V / 1A
Max. realy output silenoid valve:	230V / 1A
Temperature compensation:	electronic
Signal outputs 0/4 to 20 mA:	Load max. 500 ohm, potential-free
Response time of mA output:	< 200 ms
Display:	LCD, LED-illuminated, 240 x 64 points, graphic display
Interfaces (optional):	RS 232, RS 485, Foundation Fieldbus, HART, (others on request)
Measuring accuracy:	± 0,2 % of the actual measured value (O_2)

Version in sheet steel housing (IP 66)
(ambient temperature -20 °C to +55 °C)

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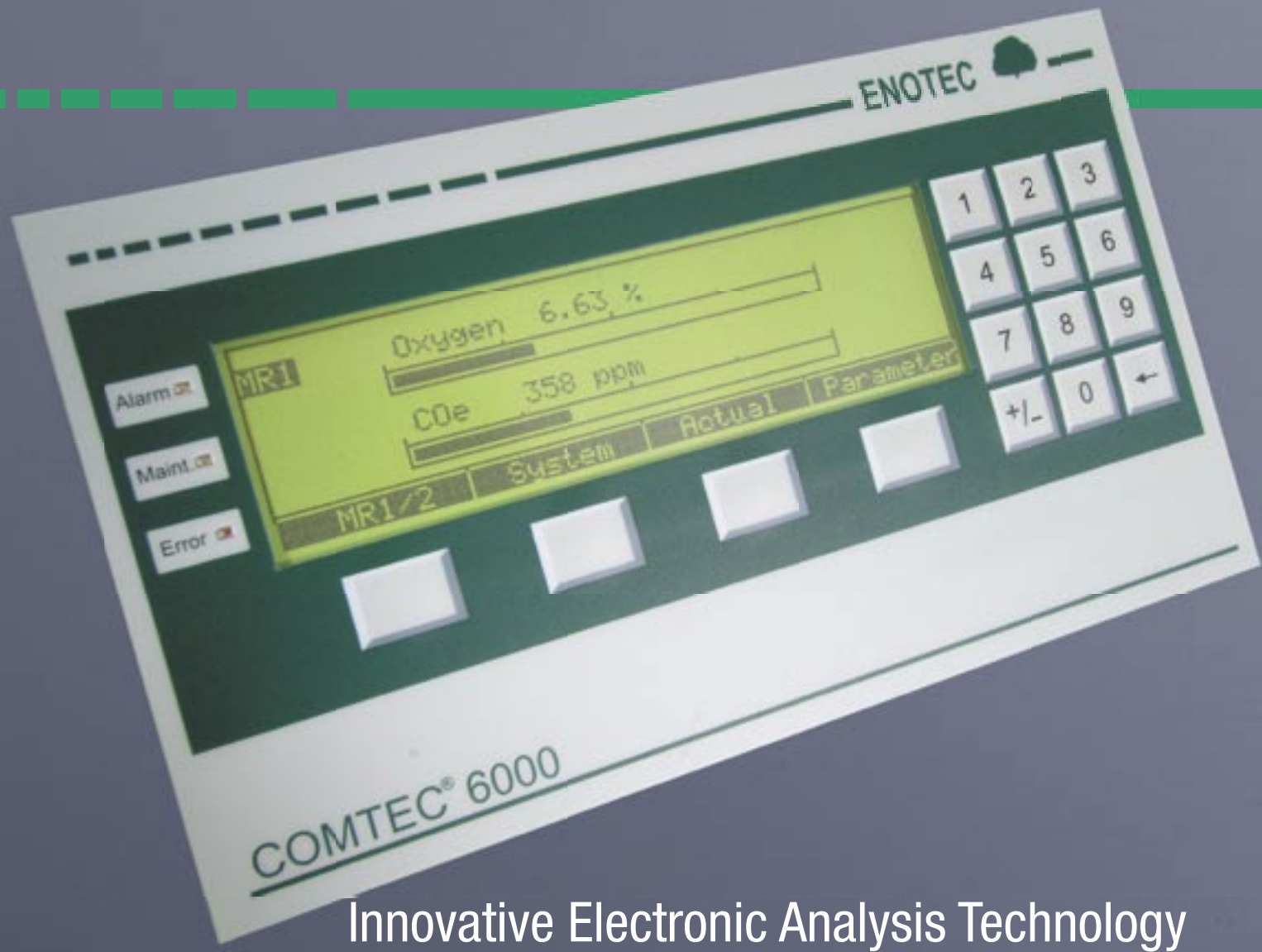


Innovative Electronic Analysis Technology designed for Maximum Accuracy of Measurement with Simple Operator Interface

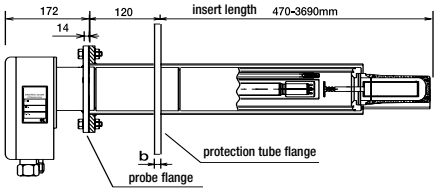
Version in 19" rack mounting module (IP-20)
(ambient temperature -20 °C to +60 °C)

Unrivalled Range of Functions

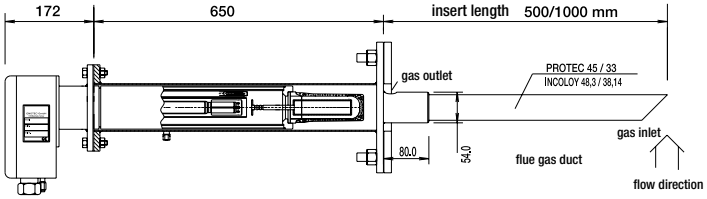
- Accuracy of measurement: deviation of only 0.2% from the measured value
- Fully automatic calibration
- Storage of measured values
- Freely adjustable output attenuation
- Electronically monitored pneumatic unit for reference air and calibration gas
- Two freely adjustable measuring ranges
- Double limit monitoring
- Self-regulating
- Intuitive operation via soft keys
- Status display with on-line help
- Display capable of graphics with
  - Digital display
  - Plain-text display
  - Bar-graph display

Dimension of the Probes

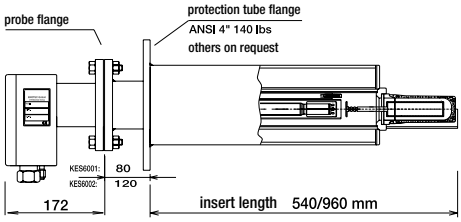
COMTEC® KES600x (for max. 600 °C)



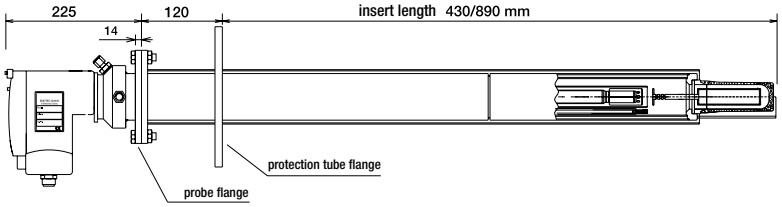
COMTEC® KES600x (for max. 1400 °C)



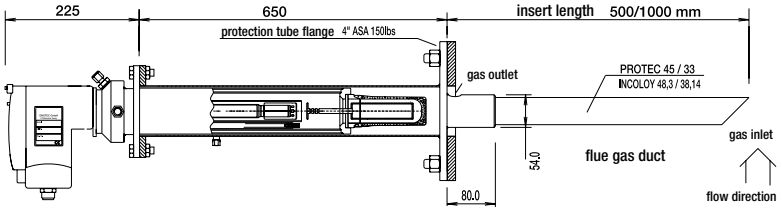
COMTEC® KES600x (for max. 600 °C) Dust-Ex Protection



COMTEC® KEX600x (for max. 500 °C) Gas-Ex Protection

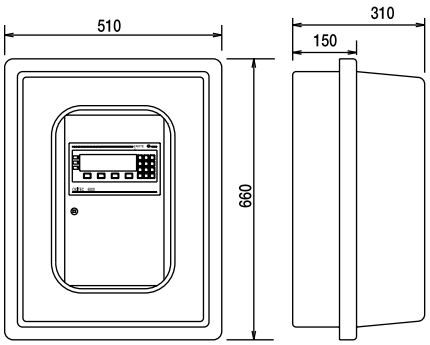


COMTEC® KEX600x (for max. 1400 °C) Gas-Ex Protection

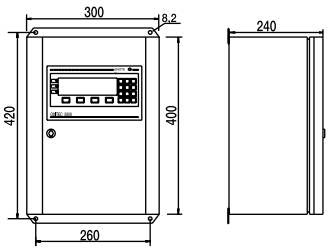


Dimension of the Electronic Equipment

GFK housing SME-56

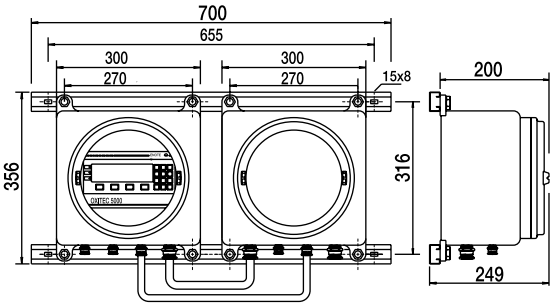


Sheet steel housing SME-53

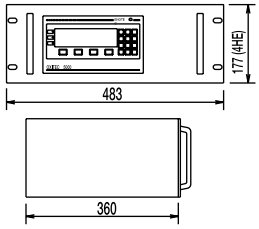


Explosion proof housing

Ex II 2 G EEx d IIC T6



19" rack mounting module SME-54



All dimensions in mm

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