

Zirconia Oxygen Analyzer BA 1000

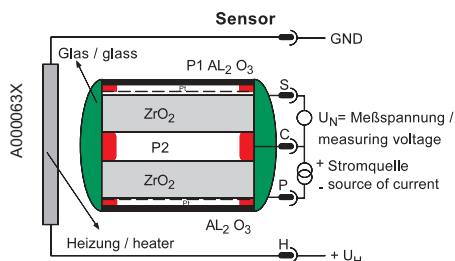


Description

The Buhler Model BA 1000 solid-state oxygen analyzer has been developed for in-situ applications. The cell is self-controlling and therefore well-suited for applications in flue gas or similar matrices.

Principle of operation

The dynamic sensor measures oxygen without using a reference gas. The sensor consists of two zirconium discs covering both sides of a platinum ring. An additional Al_2O_3 coating protects the sensor from environmental influence and increases its life expectancy. The measurement chamber (P2) is filled with a sample gas. One disc is connected with a reversible source of current. It is then used as an solid-state electronic oxygen pump. On the opposite disc the partial pressure of oxygen is determined by measuring the induced Nernst potential.



First, the oxygen ions are pumped out of the chamber. The change in electrical charge on the first disc changes in direct linear proportion to the oxygen concentration. This increases the electric potential at the opposite disc. When the electric potential has reached a certain threshold, the polarity is

reversed. Oxygen ions are then pumped back into the chamber and oxygen concentration increases. After reaching a certain threshold, the polarity changes again. This process is repeated over and over. The time for one period is linearly proportional to the oxygen concentration in the sample gas.

An optional pre-filter enables operation in gas streams with high dust concentrations.

Fields of applications include:

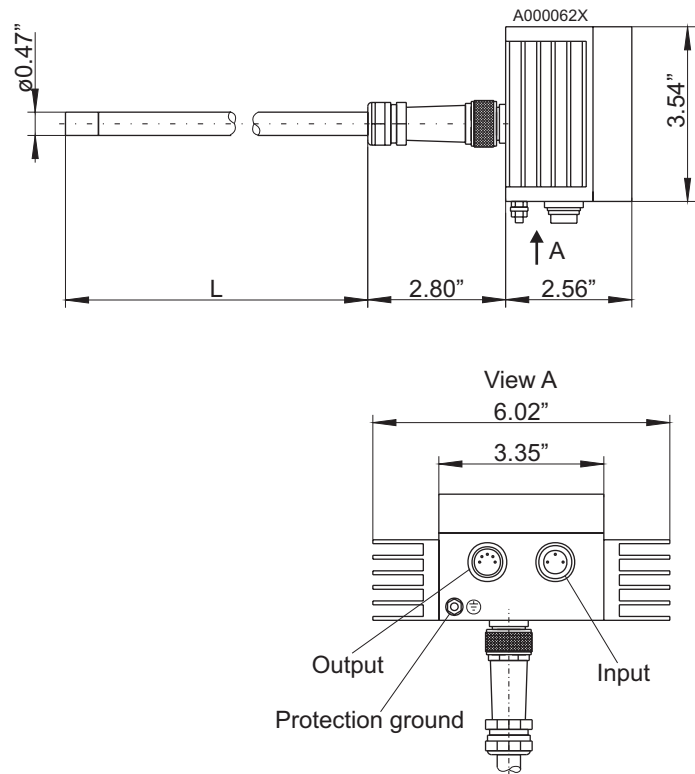
Furnaces, industrial heating facilities, industrial combustion facilities, farming (in silos), medical, compost preparation systems, biotechnology

Advantages and benefits

- Low energy consumption
- Temperature independent
- Linear output signals 4 - 20 mA
- Error protected
- High measurement precision
- Independent of gas matrix
- Long life
- Variety of applications
- No reference gas
- No calibration gas

Technical Data - Sensor BA 1000 S

Warm-up time	approx. 5 minutes
Measurement range	0.1 - 25 Vol.% O ₂ 0.1 - 100 Vol.% O ₂ upon request
Output	4-20 mA
Accuracy	+/- 2 % of full scale value
Sample temperature	32 °F up to + 840 °F
Exhaust gas velocity	up to 32 ft/s
Probe diameter	12 mm (0.47")
Response time	approx. 3 seconds
Operating ambient temperature	15 to 120 °F
Storage temperature	- 5 to + 160 °F
Power supply	24 V DC
Current	650 mA
Switch on current	4.4 A
Distance analyzer/control unit	max. 325 ft.
Protection class	IP 54
Dimensions (B x H x T)	85 x 90 x 65 mm 3.3 x 3.5 x 2.6 in.
Weight	ca. 2.43 lb
Material	Probe tube stainless steel Head aluminum painted



Please indicate with order:

Description:

Sensor BA 1000 S with probe length L = 380 mm (15.0 in.)
 Sensor BA 1000 S with probe length L = 780 mm (30.7 in.)
 Sensor BA 1000 S IP66, with probe length L = 220 mm (8.7 in.) (usable with compost probe)

Part-no.

55 01 399
 55 01 499
 55 02 00995

Options

Power supply BA 1000 N wall mounted

Power supply 115 / 230V AC 48 - 62 Hz alternatively
 Protection class IP 65
 Weight 4.6 lb

55 01 599

3 ½ digit LED display BA 1000 D 24 wall mounted

Power supply 24 V DC
 Protection class IP 65
 Weight 4.0 lb

55 01 699

3 ½ digit LED display BA 1000 D 230 wall mounted

Power supply 115 / 230V AC 48 - 62 Hz alternatively
 Protection class IP 65
 Weight 5.5 lb

55 01 799

4 ½ digit LED display BA 1000 D 230 G wall mounted

With 2 alarms for min. and max. function

Free programmable

Relays

250 V / 3 A
 115 / 230V AC 48 - 62 Hz alternatively

Protection class

Weight

IP 65

6.0 lb

55 01 899

Calibration display BA 1000 KA

Quick-check calibration unit

Dimensions

Weight

54 x 100 x 40 mm (W x H x D)

0.26 lb

55 01 2992

Tools :

Pipe fitting for probe mounting

Pipe fitting for probe mounting

Interconnecting cable 5 m

Complete pre filter with mounting flange

Pre filter without mounting flange

Probe for use in compost

1/2" NPT with PTFE locking ring

1/2" NPT with stainless steel locking ring

(other length on request)

55 01 2993

55 01 2994

55 01 2995

55 01 2997

55 01 29971

55 02 399

