



### KGZ-12



#### KGZ-12 Series High-Accuracy Oxygen Sensor

*Actual product appearance may vary.*

#### Features

- High-accuracy measurement
- Low power consumption
- No reference gas required
- Linear output signal
- No need for temperature stabilization
- Function testing and calibration in ambient air
- Long life

#### Potential Applications

- Heating boiler control
- Industrial process control
- Control of aircraft on board oxygen generation systems
- Automotive exhaust gas diagnostics
- Service instruments
- Monitoring environmental oxygen
- Agriculture, composting, fruit storage

#### Description

These are high-accuracy oxygen sensors suitable for many applications. Originally developed for boiler applications, the product range has been extended to offer versions suitable for oxygen monitoring on board commercial and military aircraft, exhaust gas testing for automotive and medical test equipment.

The sensors employ two  $ZrO_2$  discs with a small hermetically sealed chamber in between. One of the discs functions as a reversible oxygen pump, which is used to successively fill and empty the chamber. The second disc measures the ratio of the partial pressure difference and generates a corresponding sense voltage. A heat element produces the 700°C required for the  $ZrO_2$  to operate as an  $O_2$  pump.

The time taken for the pump to achieve specific minimum and maximum pressures within this chamber is a measure of the partial oxygen pressure of the environment. The sensors have to be operated by an electronic measuring circuit that controls sensor operation and signal processing. This circuit can either be incorporated into the customer's own electronics, or be purchased as a separate box of electronics from Honeywell.

#### Supporting Documentation

##### Product Sheet

Product Specifications	
Sensor Voltage Levels (recommended)	45 - 64 - 85 mV
Pump Current (recommended)	40 micro - A
Heater Supply	4.0 V (1.7 A)
Standby Heater Supply	2.0 V
Pump Resistance @ 700 °C [1292 °F]	dc 1 kOhm (typ.); ac 1 kHz 120 Ohm (typ.)
Oxygen Pressure Range	2 mbar - 3 bar
Operational Temperature	700 °C [1292 °F]
Standby Temperature	500 °C [932 °F] (typ.)
Sensitivity	1.05 ms/mbar
Accuracy	< 5 mbar
Response Time	< 15 s
Warm Up Time	< 100s
Warm Up Time from Standby	< 20 s
Permissible Gas Temperature	-100 °C to 250 °C [-148 °F to 482 °F]
Gas Flow Rate	0 to 10 ms
Repetitive Permissible Acceleration	5 g
Incidental Permissible Acceleration	30 g
Series Name	KGZ-12

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