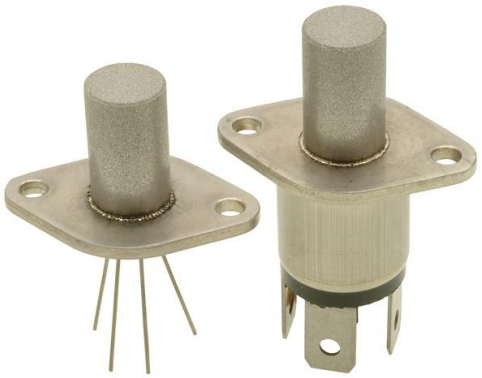
KGZ-10 Series

Oxygen Sensors



DESCRIPTION

The KGZ-10 is a high-accuracy, zirconia-based oxygen sensor. The ability of the sensor to operate without any reference gas makes it ideal for potential applications such as combustion control or aircraft oxygen generation systems.

The sensor employs 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 [1292 °F]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 KGZ-10 has to be operated by an electronic measuring circuit that controls the sensor operation and signal processing. This circuit can either be incorporated into the customer's own electronics, or be purchased as a separate interface board from Honeywell.

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

- Boiler combustion controls
- Aircraft oxygen generation systems

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Table 1. Technical Specifications

Characteristic	Parameter
Sensor voltage levels (recommended)	45-64-85 mV
Pump current (recommended)	40 uA
Heater supply,	4.0 V (1.7 A)
Heater supply (stand by)	2.0 V
Pump resistance at 700 °C [1292 °F]: dc ac	 1 kOhm, typ. 1 kHz, 120 Ohm, typ.
Oxygen pressure range	2 mbar to 3 bar
Operational temperature	700 °C [1292 °F]
Stand by temperature	500 °C [932 °F], typ.
Sensitivity	1.05 ms/mbar
Accuracy	<5 mbar
Response time	<4 s
Warm up time	<100 s
Warm up time (from stand by)	<20 s
Permissible gas temperature	-100 °C/250 °C [-148 °F/482 °F]
Gas flow rate	0 m/s to 10 m/s
Repetitive permissible acceleration	5 g
Incidental permissible acceleration	30 g

Oxygen Sensors

Figure 1. KGZ-10 Dimensions (For reference only: mm/in.)

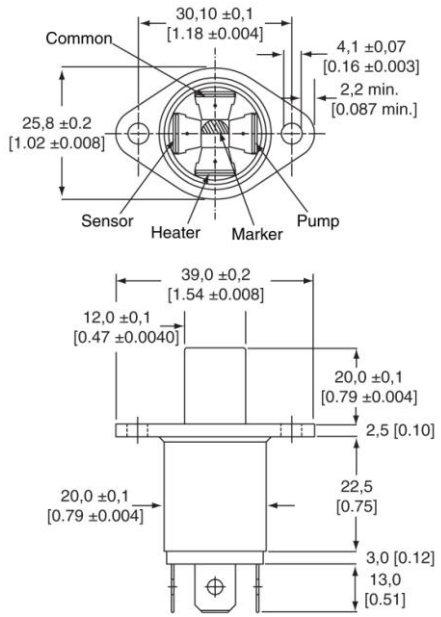
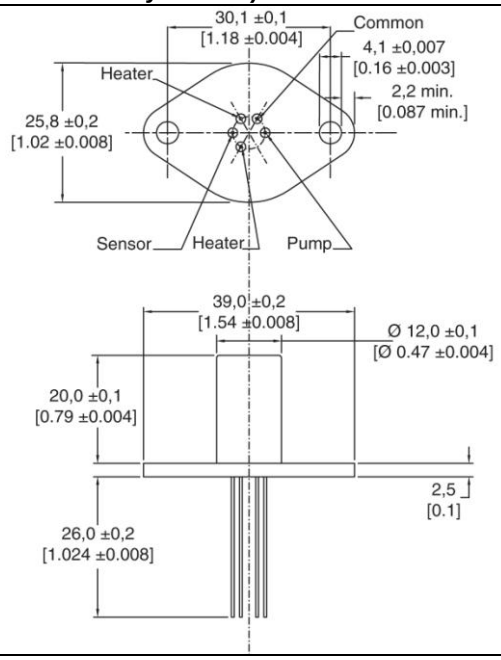


Figure 2. KGZ-10SP Dimensions (For reference only: mm/in.)



Order Guide

Catalog Listing	Description
KGZ-10	Oxygen sensor, flange mount with tabs
KGZ-10SP	Oxygen sensor, flange mount with pins

⚠ WARNING

PERSONAL INJURY

DO NOT USE these products as safety or emergency stop devices or in any other application where failure of the product could result in personal injury.

Failure to comply with these instructions could result in death or serious injury.

WARRANTY/REMEDY

Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship. Honeywell's standard product warranty applies unless agreed to otherwise by Honeywell in writing; please refer to your order acknowledgement or consult your local sales office for specific warranty details. If warranted goods are returned to Honeywell during the period of coverage, Honeywell will repair or replace, at its option, without charge those items it finds defective. **The foregoing is buyer's sole remedy and is in lieu of all other warranties, expressed or implied, including those of merchantability and fitness for a particular purpose. In no event shall Honeywell be liable for consequential, special, or indirect damages.**

While we provide application assistance personally, through our literature and the Honeywell web site, it is up to the customer to determine the suitability of the product in the application.

Specifications may change without notice. The information we supply is believed to be accurate and reliable as of this printing. However, we assume no responsibility for its use.

⚠ WARNING

MISUSE OF DOCUMENTATION

- The information presented in this product sheet is for reference only. Do not use this document as a product installation guide.
- Complete installation, operation, and maintenance information is provided in the instructions supplied with each product.

Failure to comply with these instructions could result in death or serious injury.