Honeywell

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 $^\circ$C [1292 $^\circ$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

KGZ-10 Series

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

Figure 1. KGZ-10 Dimensions (For reference only: mm/in.)
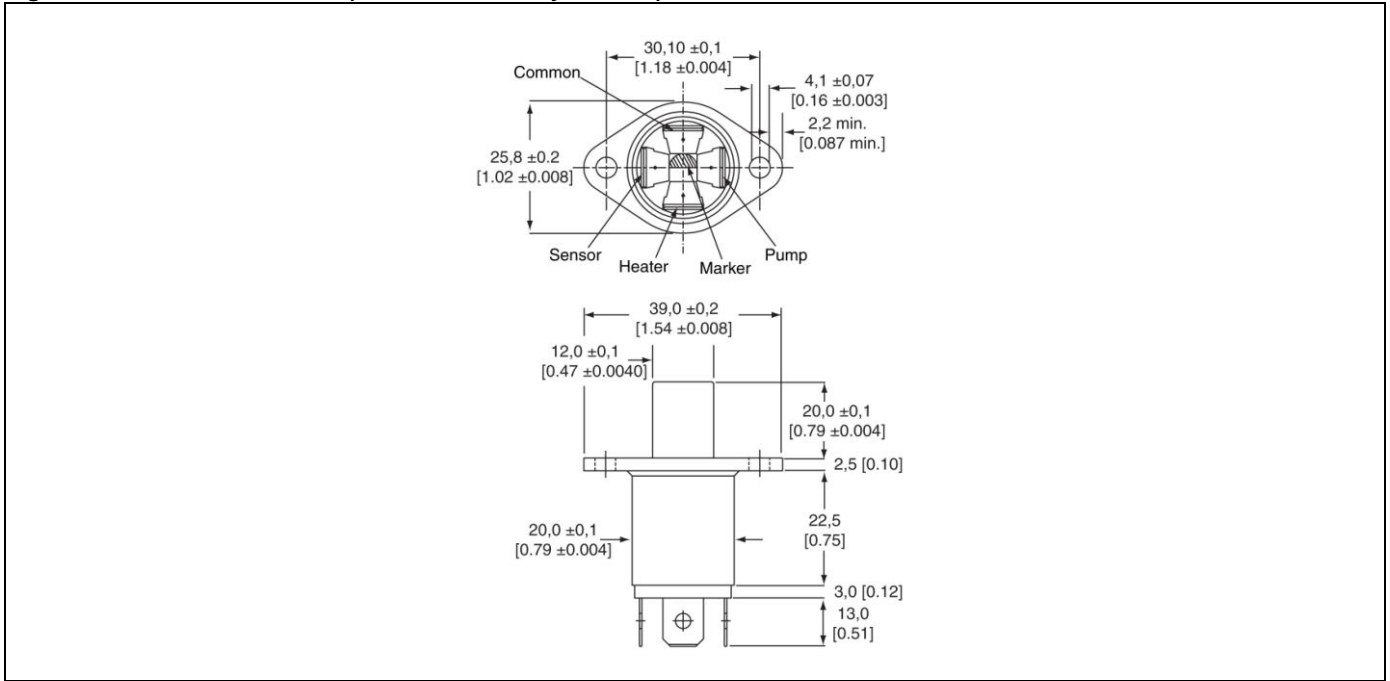
Figure 2. KGZ-10SP Dimensions (For reference only: mm/in.)
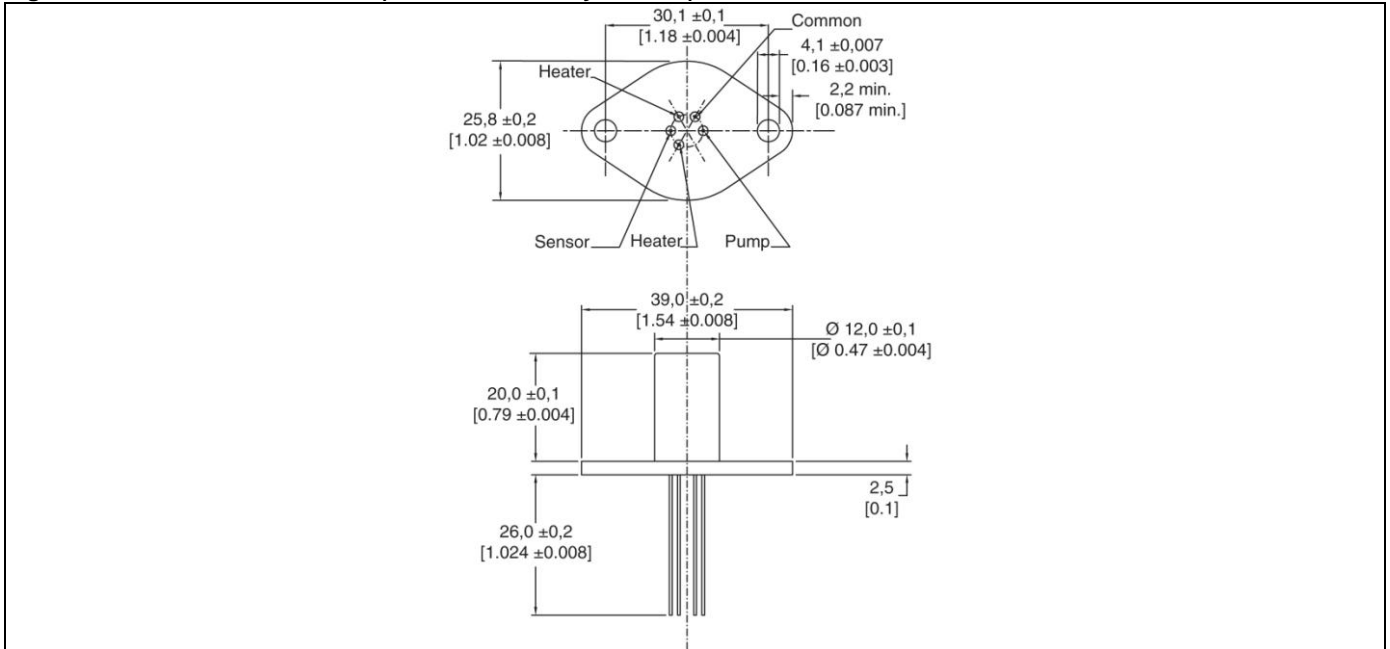
Order Guide

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

SALES AND SERVICE

Honeywell serves its customers through a worldwide network of sales offices, representatives and distributors. For application assistance, current specifications, pricing or name of the nearest Authorized Distributor, contact your local sales office or:

E-mail: info.sc@honeywell.com

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