

GMS-10 RVS Series

Oxygen Sensors

Accurate oxygen measurement



DESCRIPTION

The GMS-10 is a high-accuracy oxygen sensor 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 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 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 GMS-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 box of electronics 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

TYPICAL APPLICATIONS

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

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.

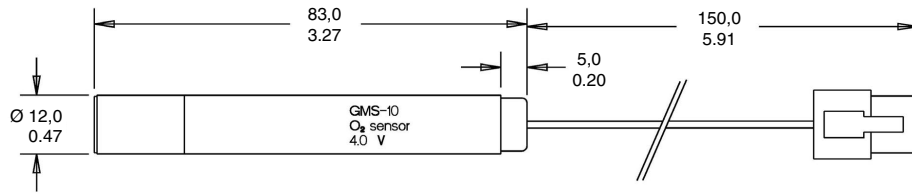
WARNING

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.

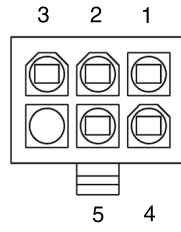
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**MOUNTING DIMENSIONS IN MM/INCHES
(FOR REFERENCE ONLY)**



WIRING DIAGRAM

| | | |
|--------|-------|--------|
| Heater | (3&5) | Yellow |
| Pump | (1) | Red |
| Common | (2) | Black |
| Sense | (4) | Blue |



TECHNICAL DATA

| Electrical Characteristics | |
|-----------------------------------------|---------------------------------------------|
| Sensor voltage levels (recommended), V | 45-64-85 mV |
| Pump current (recommended), A | 40 uA |
| Heater supply, V/A | 4.0 V (1.7A) |
| Heater supply (stand by) | 2.0 V |
| Pump resistance at 700 °C, Ohm | dc 1 kOhm (typ.) ac 1 kHz 120 Ohm (typ.) |
| Operational specifications | |
| Oxygen pressure range | 2 mbar – 3 bar |
| Operational temperature | 700 °C |
| Stand by temperature | 500 °C (typ.) |
| Sensitivity | 1.05 ms/mbar |
| Accuracy | < 5 mbar |
| Response time | < 15 s |
| Warm up time | < 100 s |
| Warm up time (from stand by) | < 20 s |
| Permissible gas temperature | -100 /+250 °C |
| Gas flow rate | 0-10 m/s |
| Mechanical characteristics | |
| Repetitive permissible acceleration | 5 g |
| Incidental permissible acceleration | 30 g |

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 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.

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:

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