Paracube® Micro
Magnetodynamic Paramagnetic O₂ gas sensor module

www.hummingbirdsensing.com
The revolutionary Paracube offers medical and industrial OEM manufacturers the combination of fit, form and function that delivers extensive performance and cost advantages over traditional electrochemical cells.
Hummingbird Sensing Technology: Our Business

Our detailed applications knowledge enables us to build cutting-edge sensor technology designed to meet customer needs.

We deliver total assurance to your business
find out more: www.hummingbirdsensing.com

EASE OF INTEGRATION
CONSULTATIVE APPROACH
LONG TERM PARTNERSHIPS
ON-GOING ENGINEERING SUPPORT

Our Values
Hummingbird operates to the highest standard of business ethics, ensuring we show each customer transparency and accountability in how we manage our customer relationships.

We are committed to:
- Long term partnerships
- Collaborative developments
- Full client and product confidentiality

Our product development is focused on designing sensors that deliver lifetime cost-of-ownership benefits to the end customer.

- Improved product reliability
- Lower cost of ownership
- Environmental compliance including RoHS

ISO9001 Certified Manufacturing Facility Crowborough UK

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Hummingbird Sensing Technology
**Paracube® Micro**  
**O₂ Sensor module**

**Specifications**
At the heart of the Paracube Micro is Hummingbird’s advanced non-depleting Magnetodynamic Paramagnetic cell, which offers a full measurement range of 0-100% and industry-leading levels of linearity, accuracy and reliability.

**Features**
- Excellent linearity and accuracy
- Non consumable technology resulting in zero ongoing cost of ownership
- RoHSII compliant alternative to electrochemical cells
- Daily calibration eliminated due to excellent measurement stability
- Analogue and digital signal outputs
- Exceptional reliability offered by innovative paramagnetic technology

**Performance**
- **Technology:** Paramagnetic
- **Range:** 0-100% O₂ (with over range -15% O₂ to 200% O₂)
- **Accuracy (Intrinsic Error):** <±0.2% O₂
- **Linearity:** <±0.2% O₂
- **Repeatability:** <±0.4% O₂ in first 24 hours, then <± 0.2% O₂/week, then <±0.2% O₂/month
- **Response Time (T₁₀ - T₉₀):** 11 to 20 seconds dependent on application and filter selection (biological filter on request)

**Output/Controls**
- **Signal Output:** Serial, full duplex UART (5V signalling levels) 200msec update rate, 9.6 kbd or 19.2 kbd. Linear mV outputs (0.5mV or 10mV per % O₂)

**Physical**
- **Weight:** 70g (2.47oz)
- **Dimensions:** Molex KK connector: 33.5 x 30.0 x 46.1mm (1.32 x 1.18 x 1.81”)  
  Molex low profile connector: 33.5 x 30.0 x 37.6mm (1.32 x 1.18 x 1.48”)
- **Diffusion Port:** Aperture diameter: 15.5mm (0.61”)
### Ambient Conditions

- **Operating Temperature:** 5°C to 50°C (41°F to 122°F)
- **Storage Temperature:** -30°C to 70°C (-22°F to 158°F)
- **Temperature Coefficient:**
  - Zero: <±0.5% O₂/10°C
  - Span: <±0.5% O₂/10°C
- **Operating Pressure Range:** ±33kPag (±5psig)
- **Ambient Humidity:** 0 to 95% non-condensing
- **External Power Supply:** 5V dc, 70mA nominal
- **Power Consumption:** 350mW
- **EMC:**
  - This product has no intrinsic function, and as such, cannot be given a CE mark. However, provided it is installed in accordance with good engineering design and build standard, the product will meet the European standards for EMC.
- **Shock and Vibration:**
- **RoHS:**
  - Complies with RoHSII directive 2011/65/EU

### Sample Conditions

- **Sample Gas Condition:** Clean dry gas, free of entrained oil, particulates <3μm, non-condensing
- **Gas Exchange:** Diffusion
Wherever you are, we are. Our international team cover the world’s industrial and medical markets.

Technical and Service Centre, Jarvis Brook, Crowborough, East Sussex, TN6 3FB, UK
Tel: +44 (0) 1892 652 181
Fax: +44 (0) 1892 662 253
info@hummingbirdsensing.com

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