

汽车氧传感器（宽域型）

Automotive Oxygen Sensor (Wide band)



产品介绍 Product Description

汽车氧传感器是一种检测发动机排放废气中氧的含量的传感器，它将自身产生的电压信号反馈给汽车发动机电子控制单元（ECU）用于空燃比闭环控制。宽域型线性氧传感器电流输出与排气中的氧离子浓度成正比从而能检测废气中很宽泛的范围。氧传感器是现代电喷发动机的一个关键零部件。

Automotive Oxygen sensor is a part that detects the amount of oxygen in the exhaust gas of vehicle engine. It feeds back its own voltage signal to the engine electronic control unit (ECU) for air-fuel ratio closed-loop control. Wideband linear oxygen sensor diffusion limited current output is approximately linear to exhaust oxygen concentration so that it measures lambda over a wide range in exhaust. Oxygen sensor is an essential component of modern engine management system (EMS).

产品特征及优势 Feature and Benefits

- 可靠性好
Strong reliability.
- 起燃时间短
Short light-off time.
- 密封性能好
Good sealing performance.
- 外观和客户接口可以与主流OEM产品兼容
Performance and customer interface compatible with OEM products.
- 抗中毒能力强
Strong anti-poisoning ability.
- 信号稳定
Stable signal.
- 响应速度快
Quick response.

产品应用 Product Application

宽域氧传感器安装在发动机排气管上，位置再三元催化器之前，检测发动机排气中的氧含量，向发动机电子控制单元（ECU）输送代表氧含量的电信号，发动机电子控制单元（ECU）根据氧传感器的信号进行实时的喷油量调整，实现发动机动力性与燃油经济性和满足排放要求。

The wideband oxygen sensor is installed on exhaust pipeline before three-way catalyst as upstream oxygen sensor. It detects the oxygen concentration in exhaust and sends electrical signal to ECU. The ECU control the injection fuel amount achieving the optimal configuration of power and fuel economy while meeting emission requirements.

操作 Operation

基本原理 Basic Principle

宽域型氧传感器的结构主要由扩散室、参考室、泵电池、氧浓差电池以及加热部件组成。宽域型传感器施加电压在泵电池上，产生泵电流，使氧浓差电池两面的氧含量保持一致，让电压值维持在0.45V（即参考电

压为0.45V)。富油的浓混合气将使氧浓差电池电压大于0.45V，传感器控制器则施加负方向的泵电流 I_p ，使氧气泵入扩散室，进行化学反应，降低废气的浓度，使电压恢复到0.45V；反之，若富氧的稀混合气将使氧浓差电池电压小于0.45V，则产生正方向的泵电流 I_p ，将氧气泵出扩散室。当燃料或氧气被中和时，氧浓差电池输出电压就维持在0.45V。宽域氧传感器就是这样通过泵电流的大小和方向，来反映废气的浓或稀，以及浓稀程度。

The structure of wideband oxygen sensor is mainly composed of diffusion chamber, reference chamber, pump cell, oxygen concentration cell and a heater. The wideband sensor applies voltage to the pump cell to generate pump current, so that the oxygen content on both sides of the oxygen concentration cell is consistent, and the voltage value is maintained at 0.45V (0.45V as reference). The rich fuel/air mixture will make the oxygen concentration cell voltage greater than 0.45V, and the sensor controller will apply the negative pump current I_p to pump oxygen into the diffusion chamber for chemical reaction, increase the O₂ concentration of exhaust gas, and restore the voltage to 0.45V; When lean fuel/air mixture will make the oxygen concentration cell voltage less than 0.45V, the positive pump current I_p will be generated to pump the oxygen out of the diffusion chamber. When the fuel/air is ideal ratio for chemical reaction, the output voltage of the oxygen concentration cell is maintained at 0.45V. In this way, the wideband oxygen sensor reflects the oxygen ion concentration of exhaust gas and the degree of concentration through the value and direction of pump current.

连接选项 Connection Options

根据客户选择定制连接系统。

Customized to customer choice of connection system.

包装选项 Packaging Options

可提供定制包装以满足任何需要，请联系KESENS技术部了解详情。

Custom packaging can be provided to meet any need, please contact KESSENS Engineering for details.

技术参数 Technical Characteristics

参数Parameters	条件Condition	标准Standard
工作温度 Operation Temperature 废气温度 Exhaust Temperature		$\leq 930^{\circ}\text{C}$
加热电阻 Heater resistance	$20^{\circ}\text{C}\pm 1^{\circ}\text{C}$	$3.2\ \Omega\pm 0.5\ \Omega$
工作电压 Working Voltage		8-10 V
检测范围 Measurement Range		$\lambda=0.7$ -空气
起燃时间 Light-off time		$\leq 15\text{s}$
λ 值检测精度 Lambda Accuracy	@ $\lambda=0.8$	$I_p=0.8\pm 0.02$
加热稳态功率 Heating power		7.5-10.0 W

可根据客户需求定制产品，如有需求请联系我们。

Customized products available upon request. Contact us for details.

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