KESENS

汽车氧传感器（宽域KS-W4.9）
Automotive Oxygen Sensor (Wideband KS-W4.9)



产品介绍 Product Description

汽车用氧传感器主要作用在于监测发动机排气中的氧含量，并根据所测得的数据输出信号（电压信号或者电流信号），反馈给ECU，从而控制喷油量的大小，使汽车发动机随时处于最佳的燃烧状态，并且与三元触媒相结合使用，有效的减少汽车尾气中有害成分的80%以上，节油5% ~20% 。

The oxygen sensor for automobile was used to monitor the oxygen concentration in the engine exhaust gas。the engine can Precisely control the amount of fuel injection through output signals (voltage signals or current signals) fed back by ECU and keeping the engine in the optimal combustion state at all times. When combined with the three-way catalytic converter, it can effectively reduce more than 80% of the harmful components in vehicle exhaust, saving 5% to 20% of fuel.

产品特征及优势 Feature and Benefits

- 安装螺栓尺寸：M18X1.5-6e;六角对边尺寸：22mm；
  Mounting bolt size: M18X1.5-6e; Hexagonal opposite side size: 22mm;
- 应用：lambda从0.65至∞；
  Application: lambda 0.65 to ∞;
- 安装扭矩：40~60 NM；
  Installation torque: 40~60 NM;
- 常规工作温度范围：350℃~850℃；
  Normal operating temperature range：350℃~850℃;
- 可靠性好； 起燃时间短， 输出信号稳定；
  Good reliability，Short ignition time, stable output signal;
- 抗中毒能力强；
  Strong anti-poisoning ability
- 密封性能好，响应速度快；
  Good sealing performance, fast response speed;
- 外观和客户接口可以与主流OEM产品兼容；
  Appearance and customer interface can be compatible with mainstream OEM products;

产品应用 Application

氧传感器在现代发动机管理系统的配置机构中被用于探测发动机所排出的燃烧废气中氧的含量，并通过信号反馈给ECU，使燃油管理子系统能够更加精确地控制调整发动机各种工作状态下的空气燃料混合比；并在绝大多数工况下使系统保持在理想空燃比工作状态，以便获得更加优良的排放控制特性和燃油经济性。本产品为宽域型传感器，是一种ZrO2双电池限流传感器，带有集成加热器。它用于测量废气的含氧量和λ值。通过使用热冲击保护层(TSP)，传感器对排气侧冷凝水具有更高的鲁棒性。

The oxygen sensor is incorporated into the configuration system of modern engine management systems to detect the oxygen content in the combustion exhaust gas emitted by the engine. It then transmits signals back to the ECU, enabling the fuel management subsystem to more precisely control and adjust the air-fuel mixture ratio under various operating conditions of the engine; and in most operating conditions, it keeps the system in an ideal air-fuel ratio working state, so as to achieve better emission control characteristics and fuel economy.

This product is a wide-range λ sensor, which is a ZrO2 dual-battery current-limiting sensor with an integrated heater. It is used to measure the oxygen content and λ value of the exhaust gas. By using a thermal shock protection layer (TSP), the sensor has higher robustness against condensation water on the exhaust side.

操作 Operation

基本原理 Basic Principle

宽域型传感器是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Ip,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Ip,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 wide-range sensor applies voltage to the pump battery, generating pump current, which keeps the oxygen content on both sides of the oxygen concentration difference cell consistent, maintaining the voltage at 0.45V (i.e., the reference voltage is 0.45V). Rich fuel-rich mixed gas will cause the voltage of the oxygen concentration difference cell to be greater than 0.45V. The sensor controller then applies a negative-direction pump current Ip to pump oxygen into the diffusion chamber for a chemical reaction, reducing the concentration of the exhaust gas and restoring the voltage to 0.45V; conversely, if the rich oxygen-lean mixed gas causes the voltage of the oxygen concentration difference cell to be less than 0.45V, a positive-direction pump current Ip is generated to pump oxygen out of the diffusion chamber. When the fuel or oxygen is neutralized, the output voltage of the oxygen concentration difference cell remains at 0.45V. The wide-range oxygen sensor reflects the concentration or leanness of the exhaust gas, as well as the degree of concentration or leanness, through the magnitude and direction of the 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 KESENS Engineering for details.

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技术参数 Functional Characteristics

信号输出 Signal output	I_p
Lambda为0.8时输出 Accuracy at lambda 0.8	0.80 ± 0.01
Lambda为1时输出 Accuracy at lambda 1	1.016 ± 0.007
Lambda为1.7时输出 Accuracy at lambda 1.7	1.70 ± 0.05
加热器额定电压 Power supply nominal voltage	7.5V
系统供电电压 System supply voltage	10.8 V to 16.5 V
能斯特电池最大泵电流 Max current load for Nernst cell	250 μA
能斯特电池工作内阻 Nominal resistance of Nernst Cell	300Ω

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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