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Oxygen sensor for motorcycles and mopeds

摩托车和轻便摩托车用氧传感器

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Oxygen sensor for motorcycles and mopeds

1 Scope

This document specifies the requirements and test methods for oxygen sensors for motorcycles and mopeds.

This document applies to oxygen sensors for motorcycles and mopeds (hereinafter referred to as oxygen sensors).

2 Normative references

The content of the following documents constitutes essential provisions of this document through normative references in the text. Among them, for the dated reference documents, only the version corresponding to the date is applicable to the thousands of documents; for the undated reference documents, the latest version (including all amendments) is applicable to this document.

GB/T 2423.7-2018 Environmental testing - Part 2: Test methods - Test Ec: Shock caused by rough operation (mainly used for equipment-type samples)

GB/T 2423.17 Environmental testing of electrical and electronic products - Part 2: Test method - Test Ka: Salt spray

GB/T 4208-2017 Degree of protection of enclosure (IP Code)

GB 14622-2016 Motorcycle pollutant emission limits and measurement methods (CHINA IV)

QC/T 902-2013 Specifications for electronically controlled fuel injection systems for motorcycles

3 Terms and definitions

The terms and definitions as defined in QC/T 902, as well as the following terms and definitions, apply to this document.

3.1

Oxygen sensor

A device, which is used to detect the oxygen content in the exhaust gas of the engine AND provides a feedback signal to the electronic control unit (ECU) to adjust the

After the oxygen sensor is tested for salt spray resistance, its performance shall meet the requirements of 4.4.

4.10 Anti-vibration performance

After the anti-vibration performance test of the oxygen sensor, the performance shall meet the requirements of 4.4.

4.11 Low-temperature resistance

After the oxygen sensor has undergone the low-temperature resistance test, its performance shall meet the requirements of 4.4.

4.12 High-temperature resistance

After the oxygen sensor has been tested for high-temperature resistance, its performance shall meet the requirements of 4.4.

4.13 Durability

After the oxygen sensor has been tested for durability, its performance shall meet the requirements of 4.4.

5 Test methods

5.1 Performance test

The oxygen sensor shall be installed on the exhaust pipe in the normal way. The temperature of the exhaust gas shall be measured 5 cm, in front of the installation position of the oxygen sensor. When the exhaust gas's temperature reaches the set value, measure the oxygen sensor's voltage and the response time of rich-to-lean and lean-to-rich, when the air-fuel ratio is $\lambda = 0.90 \sim 0.97$ and $\lambda = 1.05 \sim 1.10$.

5.2 Tightness test

In an environment of $20\text{ }^{\circ}\text{C} \sim 30\text{ }^{\circ}\text{C}$, apply a pressure of 275 kPa to the exhaust side of the oxygen sensor. After the applied pressure is stable, use a leak detector, to check the leakage within 1 minute.

5.3 Tensile strength test of wire

The oxygen sensor shall be fixed. A tensile force of $98\text{ N} \pm 2\text{ N}$ shall be applied to the connecting wire joint, for 30 s. Then, the response time and output voltage of the oxygen sensor shall be measured, according to the items specified in 4.4.

5.4 Water resistance test

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