

Translated English of Chinese Standard: GB10409-2001

www.ChineseStandard.net

Email: Sales@ChineseStandard.net

QC

ICS 43.040.10

T 35

**AUTOMOBILE INDUSTRY STANDARD
OF THE PEOPLE'S REPUBLIC OF CHINA**

QC/T 823-2009

**Fuel sensor for automobile and motorcycle
汽车、摩托车用燃油传感器**

QC/T 818-2009 How to BUY & immediately GET a full-copy of this standard?

1. www.ChineseStandard.net;
2. Search --> Add to Cart --> Checkout (3-steps);
3. No action is required - Full-copy of this standard will be automatically & immediately delivered to your EMAIL address in 0~25 minutes.
4. Support: Sales@ChineseStandard.net. Wayne, Sales manager

Issued on: November 17, 2009

Implemented on: April 1, 2010

**Issued by: Ministry of Industry and Information Technology of the
People's Republic of China**

**Ministry of Industry and Information Technology of the
People's Republic of China**

Notice

GK (2009) No. 63

Ministry of Industry and Information Technology has approved 139 industry standards, including *Snow removal vehicle* etc. In which, it includes 29 automobile industry standards, 29 pharmaceutical equipment industry standards, 4 packaging industry standards, and 77 textile industry standards (see Annex 1 for standard number, name, main content and the initial implementation date); and the approved modification list of FZ/T73001-2008 textile industry standard of *Socks* (See Annex 2). Hereby it is announced. The standard modification list shall be implemented from the announcement date. Automobile Industry Standard shall be implemented since April 1, 2010.

The above mentioned automobile, pharmaceutical equipment and packaging industry standards are published by China Planning Press. And textile industry standards are published by Standards Press of China.

Annex: Numbers and names of 29 items of automobile industry standards

**Ministry of Industry and Information Technology
of the People's Republic of China**

November 17, 2009

Annex:

Numbers and names of 29 items of automobile industry standards

Serial No.	Standard No.	Standard name	Replaced standard
1	QC/T 807-2009	Snow removal vehicle	
2	QC/T 808-2009	Technical specifications for bloodmobile	
3	QC/T 631-2009	Automobile exhaust muffler assembly technical specification and test methods	QC/T 631-1999 QC/T 630-1999
4	QC/T 60-2009	Methods of running test on bench for motorcycles and mopeds	QC7T 60-1993
5	QC/T 658-2009	Air-conditioning refrigeration system performances road test method for motor vehicles	QC/T 658-2000
6	QC/T44-2009	Vehicle-windshield window wiper of motor	QC/T44-1997
7	QC/T 633-2009	The seats of passenger vehicles	QC/T 633-2000
8	QC/T 809-2009	Nozzle of gas-fired vehicle	
9	QC/T 810-2009	Solenoid switch for automobile starters specification	
10	QC/T 811-2009	The microwave maintenance vehicle for bituminous pavement	
11	QC/T 812-2009	Specifications and test methods for oil separator for crankcase ventilation of diesel engine	
12	QC/T 813-2009	Technical requirements for special equipment of dimethyl-ether vehicles	
13	QG/T 814-2009	Mounting requirements of special equipment for dimethyl-ether vehicles	
14	QC/T 815-2009	Quick-insert filling receptacle of DME vehicle	
15	QC/T 816-2009	Specification of mobile hydrogen refueling vehicles	
16	QC/T 817-2009	Durability requirements and testing methods of reed valve type second air injectors for motorcycles and mopeds	
17	QC/T 818-2009	Spoke-wheels of motorcycles and mopeds	
18	QC/T 71-2009	Rims of motorcycles and mopeds	QC7T 71-1993
19	QC/T 819-2009	Frame of two-wheel motorcycle and two-wheel moped	
20	QC/T 227.1-2009	Test methods of the friction performance of brake lining for motorcycles and mopeds	QC/T 227.1-1997
21	QC/T 227.2-2009	Test methods of the adhesive bonding shearing strength of brake lining for motorcycles and mopeds	QG/T 227.2-1997
22	QC/T 232-2009	Strength requirements and test methods for brake handle of motorcycles and mopeds	QC7T 232-1997
23	QC/T 820-2009	Stepper motor for automobile and motorcycle instrument	
24	QC/T 14-2009	Tyre air-pressure gauge for automobile	QC/T 14-1992
25	QC/T 821-2009	Engine cold-water and oil temperature sensor for automobile	
26	QC/T 822-2009	Engine oil pressure sensor for automobile	
27	QC/T 823-2009	Fuel sensor for automobile and motorcycle	
28	QC7T 824-2009	Tachometer sensor for automobile	
29	QC/T 462-2009	Automobile engine working hour meter	QC/T 462-1999

Table of Contents

Foreword.....	5
1 Scope	6
2 Normative references	6
3 Classifications	6
4 Requirements	6
5 Test methods	9
6 Inspection rules	11
7 Marking, packaging, storage and safekeeping	12

Foreword

This standard is drafted with reference to the enterprise standards of foreign companies.

This standard was proposed by National Technical Committee on Road Vehicles of Standardization Administration of China.

This standard shall be under the jurisdiction of National Technical Committee on Road Vehicles of Standardization Administration of China.

The responsible drafting organizations of this standard: Hefei Bangli Electronic Co., Ltd, Shaoxing Longyi Automobile Fittings Co., Ltd, Shaoxing Jiasheng Instrument Co., Ltd, Wuhu Dongfang Vehicle Instrument Co., Ltd., and Anhui Jinhaida Automotive Electronics Co., Ltd.

The chief drafting staffs of this standard: Fang Xibang, Qiao Xiaoxia, Zhang Lu, Wang Wei, Shan Liming, Hu Heqi, and Chen Jianhai.

This standard is issued for the first-time.

Fuel sensor for automobile and motorcycle

1 Scope

This standard specifies the classification, requirements, test methods, inspection rules and markings, packaging, storage, and maintenance of fuel sensor for automobile and motorcycle (hereinafter referred to as the sensor).

This standard applies to fuel sensor for automobile and motorcycle. Fuel sensor for other motor vehicles shall also be implemented with reference to this standard.

2 Normative references

The articles contained in the following documents have become part of this standard when they are quoted herein. For the dated documents so quoted, all the modifications (excluding corrections) or revisions made thereafter shall not be applicable to this standard. For the undated documents so quoted, the latest editions shall be applicable to this standard.

QC/T 727-2007 Instrument for automobile and motorcycle

QC/T 29106 Technical specification of low-voltage electric harness for motor vehicles

3 Classifications

Sensors shall be classified into 3 types – resistance-type, capacitance-type, and pressure-type. Resistance-type sensors are divided into 2 types - reed variable-resistance sensors, and sliding variable-resistance sensors.

4 Requirements

4.1 General provisions

4.1.1 Product documentation:

4.1.1.1 The sensors shall conform to the requirements of this standard. And it shall be manufactured according to the drawings and design documents approved by the specified procedures.

4.1.1.2 Appearance and mounting dimensions of the sensors shall conform to the provisions of the product drawings.

4.10 Durability

The sensor shall be able to withstand 30,000 times of alternating cycle inspections. Its parts shall have no abnormal changes during the inspection. After the inspection, the variation of indication value shall not exceed 7% of the nominal value of the measured point; it shall conform to the provisions of 4.3, before and after the inspection.

4.11 Oil resistance

The sensor shall be able to withstand the immersion in the alcohol, gasoline or diesel. After the inspection, the mechanical part and rubber part shall be free of the defects such as deformation, color change and cracks. And it shall conform to the provisions of 4.3 and 4.4.

4.12 Gas tightness

For gas tightness inspection, pressure gauge reading of the sensor shall remain unchanged in 10s. And no bubbles shall occur at the sealing part.

5 Test methods

5.1 Test conditions

5.1.1 Output value test of the sensor shall be conducted under the environment conditions specified in 4.1.2.

5.1.2 The accuracy of digital multimeter for the test shall be ± 0.5 .

5.1.3 The accuracy of steel gauge shall be ± 1 mm.

5.1.4 The accuracy of standard thermometer shall be $\pm 1^{\circ}\text{C}$.

5.2 Appearance

For appearance inspection, it shall be inspected with an average illumination of about 300lx; eye distance of 500mm; and visual inspection.

5.3 Basic error test

The test shall be conducted on the special equipment. The height deviation of the special equipment shall be ± 2 mm. During the test, the liquid level shall be changed steadily from UP (Full 1) to DOWN (Empty 0); output value at 1, 1/2, alarming point, and 0 shall be measured by using multimeter. During the test, indication value can be read only after it remains at the test reference line for at least 1min. State of the movable part shall be inspected in the test.

5.4 Insulation and voltage resistance test

It shall be conducted according to the provisions 5.8 in QC/T 727-2007.

5.5 Temperature change resistance test

It shall be conducted according to the provisions 5.9 in QC/T 727-2007.

5.6 Temperature effect test

5.6.1 Test points: Conduct the inspection only at 1/2 place.

5.6.2 High-temperature effect test: Firstly, INSPECT the output value of the sensor under the specified environment condition specified in 4.1.2. Then PLACE the sensor into the high temperature cabinet. MAINTAIN the temperature for 2 hours after the cabinet temperature rises to $80^{\circ}\text{C}\pm 2^{\circ}\text{C}$. INSPECT the output value according to the methods specified in 5.3. OBTAIN the difference of output value between high temperature and the environment condition specified in 4.1.2. Output value test under high temperature can be conducted outside the cabinet, but it shall be done within 2min. Then TAKE out the sensor. PLACE it under the environment condition specified in 4.1.2 for no less than 2 hours. INSPECT the state and output value of movable part according to the methods specified in 5.3.

5.6.3 Low-temperature effect test: Firstly, INSPECT the output value of the sensor under the specified condition specified in 4.1.2. Then PLACE the sensor into the low temperature cabinet. MAINTAIN the temperature for 2 hours after the cabinet temperature rises to $-40^{\circ}\text{C}\pm 3^{\circ}\text{C}$. INSPECT the output value according to the methods specified in 5.3. Then OBTAIN the difference of output value under low temperature and the environment condition specified in 4.1.2. Output value test under low temperature can be conducted outside the cabinet, but it shall be done within 2min. Then TAKE out the sensor. PLACE it under the environmental condition specified in 4.1.2 for no less than 2h. INSPECT the state and output value of movable part according to methods specified in 5.3.

5.7 Temperature resistance and humidity cycling test

It shall be conducted according to the provisions 5.11 in QC/T 727-2007.

5.8 Vibration resistance test

It shall be conducted according to the provisions 5.17 in QC/T 727-2007. After the test, INSPECT if the parts are loosened or damaged. PLACE the sensor under the environment condition specified in 4.1.2 for at least 2 times. Then INSPECT the status and output value of the movable part according to the methods specified in 5.3.

5.9 Durability test

INSTALL the sensor on the test stand according to normal working position; MAKE the sensor rise and FALL cyclically with the frequency of 6~10 times per minute so

6.4 Acceptance inspection

It shall be conducted according to the provisions 6.4 in QC/T 727-2007.

6.5 Type inspection

6.5.1 The conditions when type inspection shall be conducted:

It shall be conducted according to the provisions 6.5.1 in QC/T 727-2007.

6.5.2 Sampling and grouping:

6.5.2.1 Products for type inspection shall be sampled from the same batch of products that have been inspected as qualified for ex-factory inspection. At least 9 products shall be sampled.

6.5.2.2 Re-inspection shall be performed according to ex-factory inspection items. Then the samples are divided into 3 groups after they pass the re-inspection. Conduct the inspection according to the following grouping and the item order.

- Group 1: Insulation and voltage resistance test, oil resistance test, gas tightness test;
- Group 2: Temperature change resistance test, temperature effect test, temperature resistance and humidity cycling test, vibration resistance test;
- Group 3: Durability test.

Note: For the entrusted test, the sampling and grouping of the samples shall be determined through negotiation with the manufacturer, but the number of inspected samples shall not be less than 3 for each inspected item.

6.6 Qualified determination

It shall be conducted according to the provisions 6.5.3 in QC/T 727-2007.

7 Marking, packaging, storage and safekeeping

Perform it according to the provisions specified in Chapter 7 of QC/T 727-2007.

_____ **END** _____