Translated English of Chinese Standard: JJF 1368-2012
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JJF

TECHNICAL SPECIFICATIONS FOR MEASUREMENT OF THE PEOPLE'S REPUBLIC OF CHINA

JJF 1368-2012

Program of Pattern Evaluation of Combustible -- Gas Alarm Detectors

可燃气体检测报警器型式评价大纲

Issued on: December 03, 2012 **Implemented on: March 03, 2013**

Issued by: The General Administration of Quality Supervision, Inspection and Quarantine (AQSIQ) of The People's Republic of China

Program of Pattern Evaluation of Combustible -- Gas Alarm Detectors

JJF 1368-2012

Administrative organization: National Technical Committee of Environmental Chemistry
Drafting organization: Hebei Provincial Institute of Metrology;
Measurement Supervision and Testing Institute of Hebei Province

The National Technical Committee of Environmental Chemistry is entrusted to explain this specification

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Contents

Introduction

This program of pattern evaluation is prepared according to JJF 1015 "General Norm for Pattern Evaluation and Pattern Approval of Measuring Instruments", JJF 1016 "The Rules for Drafting Program of Pattern Evaluation of Measuring Instruments" and JJF 1001 "General Terms in Metrology and Their Definitions".

Technical regulations such as JJG 693-2011 "Alarm Detectors of Combustible Gas", GB 12358-2006 "Gas Monitors and Alarms for Workplace General Technical Requirements", GB 15322-2003 "Combustible Gas Detector" and GB 16808-2008 "Combustible Gas Alarm Control Units" are referenced by technical index of this program of pattern evaluation.

This program of pattern evaluation is issued for the first time.

TECHNICAL SPECIFICATIONS FOR MEASUREMENT

OF THE PEOPLE'S REPUBLIC OF CHINA

中华人民共和国国家计量技术规范

JJF 1368-2012

Program of Pattern Evaluation of Combustible -- Gas Alarm Detectors

可燃气体检测报警器型式评价大纲

1 Scope

This program of pattern evaluation applies to the combustible-gas alarm detectors (including combustible gas detector, hereinafter referred to as "detector") used in non-shaft operating environment and civil place.

2 Normative References

JJG 693-2011 “Alarm Detectors of Combustible Gas"

GB 12358-2006 “Gas Monitors and Alarms for Workplace-General Technical Requirements"

GB 15322-2003 “Combustible Gas Detector"

GB 16808-2008 “Combustible Gas Alarm Control Units"

GB/T 17626.2-2006 “Electromagnetic Compatibility (EMC) -- Testing and Measurement Techniques -- Electrostatic Discharge Immunity Test"

GB/T 17626.3-2006 “Electromagnetic Compatibility-Testing and Measurement Techniques-Radiated Radio-frequency Electromagnetic Field Immunity Test"

GB/T 17626.4-2008 “Electromagnetic Compatibility-Testing and Measurement Techniques-Electrical Fast Transient/Burst Immunity Test"

The provisions of above normative documents, through reference in this program, constitute provisions of this program. For dated references, subsequent amendments to (excluding any correction) or revisions are not applicable to this program. However, parties who mutually agree to this program are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the respective normative document is applicable to this program.

3 General

After the stable power-on and preheating, provide the zero gas with a flow as required by the instruction of the detector and the gas reference material with a concentration being 60% of the full span of the detector into the detector, check the zero point and indication on the detector. Run the detector for continuous 28d and never adjust and check the detector in this test. At the last test day, provide the gas reference materials with concentration being 10%, 40% and 60% of the full span of the detector respectively and detect the indicated error.

9.2.3.5 Data processing

Same as 9.1.1.5.

9.2.3.6 Qualification criteria

It is qualified if the result is in accordance with those specified in 7.3.

9.2.4 Adaptability of supply voltage

9.2.4.1 Test purposes

To test whether the adaptability of supply voltage of the detector complies with 7.4 under the test conditions.

9.2.4.2 Test conditions

Same as 9.1.1.2.

9.2.4.3 Test equipment

a) Same as 9.1.1.3.

b) Voltmeter: AC voltage 0~1000V, DC voltage 0~200V; the accuracy higher than Grade 1.0.

c) Power supply: 0~300V for AC; 0~50V for DC.

9.2.4.4 Test procedure

a) As for the AC powered detector, connect the power line of the detector on the adjustable supply voltage which is set at the rated value. After the stable preheating, provide the zero gas and gas reference material with a concentration being about 60% of the full span into the detector and check the zero point and indication on the detector. Adjust the supply voltage to the detector at 85% of the rated operating voltage and keep it stable for 20min, provide the gas reference materials with concentration of 10%, 40% and 60% of full span of the detector respectively, detect the indicated error thereof. Provide the zero gas so that the detector is returned to the normal monitoring state. Adjust the supply voltage to the detector at 115% of the rated operating voltage and keep it stable for 20min, provide the gas reference materials with concentration of 10%, 40% and 60% of the full span of the detector respectively and detect the indicated error thereof.

b) As for the DC powered detector, connect the power line of the detector on the adjustable supply voltage which is set at the rated value. After the stable preheating, provide the zero gas and gas reference material with a concentration being about 60% of the full span into the detector and check the zero point and indication on the detector. Adjust the supply voltage to the detector to the minimum operating voltage and keep it stable for 20min, provide the gas reference materials with concentration of 10%, 40% and 60% of the full span of the detector respectively and detect the indicated error thereof. Then provide the zero gas so that the detector is returned to the normal monitoring state. Adjust the supply voltage to the detector to the maximum operating voltage and keep it stable for 20min, provide the gas reference materials with concentration of 10%, 40% and 60% of the full span of the detector respectively and detect the indicated error thereof.

9.2.13.1 Test purposes

To test whether the electrostatic discharge immunity of the detector complies with 7.8.2 under the test conditions.

9.2.13.2 Test conditions

Same as 9.1.1.2.

9.2.13.3 Test equipment

a) In conformity with the requirements of Chapter 6 in GB/T 17626.2-2006;

b) Same as 9.1.1.3.

9.2.13.4 Test procedure

Make the test according to the requirements of Chapter 8 in GB/T 17626.2-2006. During the test, observe and record operating state of the detector; after the test, make the test according to 9.1.1.4.

9.2.13.5 Data processing

Same as 9.1.1.5.

9.2.13.6 Qualification criteria

It is qualified if the result is in accordance with those specified in 7.8.2.

9.2.14 Electrical fast transient/burst immunity test (only for AC powered detector)

9.2.14.1 Test purposes

To test whether the electrical fast transient/burst immunity of the detector complies with 7.8.3 under the test conditions.

9.2.14.2 Test conditions

Same as 9.1.1.2.

9.2.14.3 Test equipment

a) In conformity with the requirements of Chapter 6 in GB/T 17626.4-2008.

b) Same as 9.1.1.3.

9.2.14.4 Test procedure

Make the test according to the requirements of Chapter 8 in GB/T 17626.4-2008. During the test, observe and record operating state of the detector; after the test, make the test according to 9.1.1.4.

9.2.14.5 Data processing

Same as 9.1.1.5.

9.2.14.6 Qualification criteria

It is qualified if the result is in accordance with those specified in 7.8.3.

10 Judgments and Treatment of Pattern Evaluation Result

10.1 The judgments of the test results obtained for each specification are divided into the single judgment and comprehensive judgment.

10.2 In case of a single judgment, the technical requirements, measured data and conclusion for qualification or disqualification for each item shall be given. The individual test result is judged to be qualified until the results for all the three tested prototypes for a single item are qualified. If there is any unqualified prototype, the result for the individual test is judged to be disqualified.

18 Electrical fast transient/burst immunity test

Test conditions:

Start time of test: (HH:MM), (MM) (DD), (YYYY)

End time of test: (HH:MM), (MM) (DD), (YYYY)

The detector operates normally during the test. □ Yes □ No

Indicated error test after the electrical fast transient/burst immunity test:

Start time of test: (HH:MM), (MM) (DD), (YYYY)

End time of test: (HH:MM), (MM) (DD), (YYYY)

Record of test data:

No. of detector	Concentration of gas reference material, c_s	Indication of detector, c_i			Average value, $\bar{c}$	Indicated error, $\frac{\bar{c}-c_s}{R}\times 100\%$	+	-
		1	2	3				

Record of abnormalities in the test:

Measuring instrument and apparatus used in the test:

Name	Model	No.	Accuracy	Expiry date

Ambient temperature: Relative humidity: Atmospheric pressure:

Evaluator:

References and Original Chinese Documents

[1] JJF 1368-2012 Program of Pattern Evaluation of Combustible-Gas Alarm Detectors.
http://www.chinesestandard.net/Default.aspx?PDF-English-ID=JJF%201368-2012

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