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

JJG 1133-2017

**High-Low Concentration Methane Transmitters for Coal Mine
(English Translation)**

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Table of Contents

Introduction (III)	
1 Scope (1)	
2 Terminology (1)	
2.1 Conversion action value (1)	
2.2 Low concentration section (1)	
2.3 High concentration section (1)	
3 Overview (1)	
4 Measurement performance requirements (1)	
4.1 Indication error (1)	
4.2 Repeatability (2)	
4.3 Response time (2)	
4.4 Drift (2)	
4.5 Signal transmission error (2)	
5 General technical requirements (2)	
5.1 Appearance and structure (2)	
5.2 Logo and logo (2)	
5.3 Power check (2)	
5.4 Alarm function and alarm action value check (2)	
5.5 Conversion function and conversion action value check (2)	
5.6 Insulation resistance (2)	
6 Metering device control (3)	
6.1 Test conditions (3)	
6.2 Verification Project (3)	
6.3 Test method (4)	
6.4 Processing of test results (8)	
6.5 Test cycle (8)	
Appendix A Coal mine with high and low concentration of methane sensor measurement test Original record table (9)	
Appendix B Verification Certificate/Verification Result Notification Page Format (12)	

6.5 Test cycle (8)

Appendix A Coal mine with high and low concentration of methane sensor measurement test Original record table (9)

Appendix B Verification Certificate/Verification Result Notification Page Format (12)

Introduction

This procedure is based on the requirements and format of JJF1002-2010 "National Rules for the Preparation of Metrological Verification Procedures". this the main technical indicators of the reference to the JJG 678-2007 "catalytic combustion methane detector", AQ6206-2006 "High and low concentration methane sensor for coal mine", MT445-1995 "Thermal conductivity high concentration methane sensor technology for coal mine condition".

This order is the first release.

Test procedure for methane sensor with high and low concentration in coal mine

1 Scope

This specification is applicable to the high and low concentration of methane sensors for coal mines with the principle of carrier catalytic combustion and thermal conductivity (hereinafter Called "sensor") for the first time of verification, subsequent verification and use of the inspection.

This procedure does not apply to infrared and laser principles of the sensor.

2 terms

2.1 conversion action value actionvalueofconversion the use of carrier catalytic combustion - thermal conductivity combination of the principle of the sensor, in the carrier catalytic components and thermal conductivity components work turn Change the display value.

2.2 low concentration segment segmentoflowconcentration Measuring range of 0 ~ 4% of the measurement section, the sensor using the carrier catalytic element detection of methane in the environment concentration.

2.3 high concentration segment segmentofhighconcentration Measuring range of 4% to 100% of the measurement section, the sensor using thermal conductivity components to detect methane in the environment concentration.

3 Overview

The sensor is used to continuously detect the concentration of methane gas in a coal mine operating environment.

The sensor is mainly composed of carrier catalytic element, thermal conductivity element,

electronic component and display part. Catalyzed by the carrier Element, the thermal conductivity element converts the methane gas concentration in the environment into an electrical signal and then processes it through the electronic component Shows the concentration value and outputs an electrical signal corresponding to the concentration value.

The sensor sampling method is mainly diffusion type.

4 Measurement performance requirements 4.1 indication error the indication error of the sensor shall be in accordance with Table 1.

Table 1 shows the indication error limits for the sensor

Measuring range maximum permissible error $0 \leq x \leq 1\%$ $\pm 0.10\%$ $1\% \leq x \leq 2\%$ $\pm 0.20\%$ $2\% \leq x \leq 4\%$ $\pm 0.30\%$ $4\% \leq x \leq 40\%$ $\pm 10\%$ Note. x --- mole fraction of methane; FS --- upper limit of measurement range.