

JJF

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**Calibration Specification for Carbon Dioxide Gas Detectors and
Alarms for Mining
(English Translation)**

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Table of Contents

Introduction (II)	
1 Scope(1)	
2 Overview(1)	
3 Metering characteristics (1)	
3.1 Indication error (1)	
3.2 Repeatability (1)	
3.3 Response time(1)	
3.4 Drift (1)	
3.5 Analog signal transmission error (1)	
3.6 Alarm sound level intensity and alarm action value (1)	
4 Calibration conditions(2)	
4.1 Environmental conditions(2)	
4.2 Calibration measuring instruments and supporting equipment (2)	
5 Calibration items and calibration methods (3)	
5.1 Alarm adjustment (3)	
5.2 Indication error (3)	
5.3 Repeatability (3)	
5.4 Response time(4)	
5.5 Drift(4)	
5.6 Analog signal transmission error (4)	
5.7 Alarm sound level intensity and alarm action value (5)	
6 Expression of calibration results (5)	
7 Recalibration interval (6)	
Appendix A Simulation Circuit Technical Requirements (7)	
Appendix B Calibration Record of Mine Carbon Dioxide Gas Detection Alarm (8)	
Appendix C Calibration Certificate Inner Page Format (10)	
Appendix D Example of measurement uncertainty assessment of alarm indication error (11)	

7 Recalibration interval (6)

Appendix A Simulation Circuit Technical Requirements (7)

Appendix B Calibration Record of Mine Carbon Dioxide Gas Detection Alarm (8)

Appendix C Calibration Certificate Inner Page Format (10)

Appendix D Example of measurement uncertainty assessment of alarm indication error (11)

Introduction

JJF 1071 "Rules for the Preparation of National Metrology and Calibration Specifications", JJF 1001 "General Metrology Terms and Definitions", JJF 1059.1 "Evaluation and Expression of Uncertainty in Measurement" together constitute the basic series of regulations supporting the formulation of this specification the main technical indicators of this specification refer to AQ1052-2008 "General Technical Specifications for Mining Carbon Dioxide Sensors" Technical Conditions.

This specification is published for the first time.

Mine carbon dioxide gas detection alarm Calibration Specifications

1 Scope

This specification applies to dioxygen with a measurement range of 0.00% to 5.00% molar fraction used in mine working environments.

Calibration of carbon monoxide gas detection alarm.

2 Overview

Mine carbon dioxide gas detection alarm (hereinafter referred to as the alarm) is mainly used to detect carbon dioxide in the mine working environment.

The concentration of carbon monoxide gas is usually composed of a detection unit, a signal processing unit, a display unit and an alarm unit.

The alarm generally uses the non-dispersive infrared principle. When the displayed value is greater than the alarm setting value, it has sound and light alarm functions.

The sampling method can be divided into diffusion type and inhalation type; according to the use method, it can be divided into portable type and fixed type.

With analog signal output function.

3. Metering characteristics

3.1 Indication error the indication error shall comply with the requirements of Table 1.

Table 1 Indication error

Measuring range

(Mole fraction)

Maximum allowable error (Mole fraction) 0.00%~1.00% $\pm 0.10\%$ >1.00%~5.00% $\pm (0.05\%$
5% of reference value) Note. The reference value is the mole fraction of carbon dioxide gas
standard substance.

3.2 Repeatability

Not more than 2%.

3.3 Response Time

The fixed type should not exceed 30s, and the portable type should not exceed 60s.

3.4 Drift

Zero drift and span drift should not exceed 1% of the maximum allowable error.

3.5 Analog signal transmission error not more than 0.5%.

3.6 Alarm sound level intensity and alarm action value

3.6.1 The sound and light alarms of the alarm should be normal.