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MT

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

MT/T 782.2-1998

**Mechanical and electrical equipment temperature transducer
for coal mine specification for ON/OFF output
(English Translation)**

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Foreword

This standard strictly abides by GB in terms of explosion protection and mine safety 3836.1-1983 "General requirements for explosion-proof electrical equipment for explosive environments Seeking, GB 3836.4-1983 "intrinsically safe circuits and electrical equipment" i "for explosion-proof electrical equipment for explosive environments" and GB/T 12173-1990 "Related regulations for general electrical equipment for mining". Technical content with MT 209-1990 "Coal Mine Communication and Inspection General technical requirements for electrical and electronic products for measurement and control ", MT 210-1990 "Basic test of electric and electronic products for communication, detection and control in coal mines Inspection Methods "and other coal industry standards.

According to the performance characteristics and test methods of temperature sensors for electromechanical equipment used in coal mines, the standard is divided into two parts.

Part 1. Analog signal output type;

Part 2. Switching signal output type;

This standard is the second part (i.e.MT/T 782.2). Digital output type.

This standard was proposed by the former Department of Science, Technology and Education of the Ministry of Coal Industry.

This standard is under the jurisdiction of the Technical Committee for Standardization of Special Equipment for Coal Mines.

This standard was drafted. Changzhou Institute of Automation, China Coal Research Institute.

1 Scope

This standard specifies the product classification, technical requirements, test methods, and inspections of temperature sensors for coal mine electromechanical equipment.

Rules, signs, packaging, transportation and storage.

This standard is applicable to temperature sensors (hereinafter referred to as abbreviations) for measuring the temperature of electromechanical equipment under coal mines and outputting switching signals.

"Temperature Sensor").

2 Reference standards

The following standards contain provisions that, through reference in this standard, constitute provisions of this standard. When this standard was published, the editions shown were all is effective. All standards will be revised, and all parties using this standard should explore the possibility of using the latest versions of the following standards.

156-1993 standard voltage GB 191-1990 packing storage and transportation pictogram
GB/T 2829-1987 Sampling procedures and sampling tables for periodic inspection (suitable for inspection of production process stability) GB 3836.1-1983 General requirements for explosion-proof electrical equipment for explosive environments G3836.4-1983
Explosion-proof electrical equipment for explosive environments Intrinsically safe circuits and electrical equipment "i" GB/T 5080.1-1986 General requirements for equipment reliability testing GB/T 5080.7-1986 Equipment reliability test Validation test of failure rate and mean time between failures under the assumption of constant failure rate Test plan
GB/T 12173-1990 general electrical equipment for mining GB/T 13384-1992 general technical requirements for packaging of mechanical and electrical products MT 209-1990
General technical requirements for electric and electronic products for communication, detection and control in coal mines MT 210-1990 Basic test methods for electric and electronic products for communication, detection and control in coal mines MT 286-1992
Model and management method of coal mine communication and automation products MT/T 408-1995 DC stabilized power supply for coal mine

3.1 Model

Should conform to MT Relevant provisions of 286.

3.2 Type

3.2.1

According to explosion-proof type. mine intrinsically safe type; general mine type.

3.2.2

According to measurement methods. contact type; non-contact type.

3.2.3

By action value. fixed value type; adjustable type

3.3.1 According to operating temperature. from 0

Starting at °C every 5 °C a grade.

3.3.2 According to temperature adjustment range. The temperature adjustment range of the adjustable temperature sensor is regulated by the product standard.

4 Technical requirements

4.1

The product shall meet the requirements of this standard and be manufactured in accordance with the drawings and documents approved by the prescribed procedures.

4.2 Environmental conditions

4.2.1

The temperature sensor should work normally under the following conditions.

- a) Ambient temperature. -5 ~ 40 °C, other temperature grades should meet MT Provision of 4.2 of 209-1990;
- b) Average relative humidity. not more than 95% (25 °C);
- c) Atmospheric pressure. 80 ~ 106 kPa;
- d) Where there is no corrosive gas that destroys insulation in coal mines.

4.2.2

The worst storage and transportation conditions that the temperature sensor can withstand are.

- a) High temperature. 60 °C;
- b) Low temperature. -40 °C;
- c) Average relative humidity. 95% (25 °C);
- d) Vibration. acceleration 50 m/s²;
- e) Shock. Peak acceleration 500 m/s².

4.3.1 Operating temperature

The operating temperature of the fixed temperature sensor shall comply with the provisions of 3.3.1.

4.3.2 Recovery temperature

Specific by the product standard.

4.3.3 Temperature deviation

The temperature limit deviation of the operating temperature and the recovery temperature is generally selected from the following values. ± 0.5 , ± 1.0 , ± 1.5 , ± 2.0 , ± 2.5 , ± 3.0 °C.

4.3.4 Operating temperature adjustment range

For the action value adjustable temperature sensor, the product standard should specify.

4.3.5 Response time

Generally not greater than 5 s, specified by the product standard.

4.3.6 Detection angle and detection distance

Non-contact temperature sensors are specified by product standards.

4.3.7 Output signal

Should conform to MT Provisions of 5.3.2 of 209-1990.

4.3.8 Supply voltage

AC power supply voltage level should conform to GB According to 156, the DC power supply voltage level should conform to MT/T Regulation 408, specifically Product standards.

4.4 Select performance

The temperature sensor can choose the following performance, but it should meet the requirements for use.

- a) Multi-point measurement output function;
- b) alarm function;
- c) display function;
- d) other properties.