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

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Electrical fire monitoring system - Part 4: Arcing fault detectors

电气火灾监控系统 第4部分：故障电弧探测器

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- 8 Contact discharge (shell conductor and the sample Coupling plate)
- 10 Acceleration m/s
- 12 Crash Test 13
- 20 No power

Foreword

GB this Part 5,7,

8 Chapter 14287 are mandatory, the rest are recommended. GB 14287 "electrical fire monitoring system" consists of the following components.

--- Part 1. Electrical fire monitoring equipment;

--- Part 2. residual current electric fire detectors;

--- Part 3. temperature electrical fire detectors;

--- Part 4. arc fault detector; This section GB of Section 414 287. This section drafted in accordance with GB/T 1.1-2009 given rules. This section presents the People's Republic of China Ministry of Public Security. This part of the National Standardization Technical Committee on Fire fire detection and alarm Technical Committee (SAC/TC113/SC6) centralized. This in part by the Ministry of Public Security is responsible for drafting the Shenyang Fire Research Institute, Ningbo Xi Yu Electronic Development Co., Ltd., Shanghai Hua Su Electrical Technology Co., Secretary, Shenyang Swan Electric Co., Ltd., Fujian Junhao Electronics Co., Ltd. participated in the drafting. The main drafters of this section. Ding Hongjun, Gao Wei, Zhang Ying Cong, Li Xiaobai, Cao, Liu Changan, Qi Zi Bo, Hu Shaoying, Huang Wujie. Electrical fire monitoring system Part 4. arc fault detector

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Note. The power tolerance of $\pm 10\%$. 6.3.2.1.2 After the start of test equipment, if generated per second and up to nine of the following half-cycle arc fault lines or 14 and more than half Arc fault cycle, then this test is an effective test group, observe and record the state of the detector, and alarm recording time sample; if each test Number of seconds of arc generated when the condition is not satisfied, then the test is invalid in this group test should be repeated.

Note. The arc duration not exceeding 0.42ms or current value does not exceed 5% of the rated current value is not as small arc arc statistics.

6.3.2.2 Test equipment and methods 6.3.2.2.1 Test series carbonized arc path 2, the two single-core copper conductor (2.5mm²) after the end of the hinge 2cm insulation removed, the wire insulation to retain overlapping portions 2mm ~ 4mm, with plastic insulation tape

around the hinge portion 3 weeks to prepare a sample, the sample test access lines generated by the high-pressure device Set generates a high voltage insulation breakdown so that the overlapped portion is formed carbonized path, from the low voltage (AC220V) device on the line and load, thereby producing Arcing. Figure 2 tandem arc path carbonation test circuit schematic 6.3.2.2.2 carbonation path parallel arc tests 3, the two parallel single-core copper wire (2.5mm²) at an intermediate portion spaced 3mm incision after insulation with plastic insulating tape FIG. Wound incision site three weeks to prepare a sample, the sample test access lines, high voltage generated by the high voltage generator means causes insulation breakdown shaped cutout portion A carbonized path, by a low voltage (AC220V) device on the line and load power supply, resulting in an arc. Figure 3 parallel test circuit schematic carbonized arc path 6.3.2.2.3 parallel metallic contact arc tests As shown, at an angle to the horizontal blade 4 slow down in two parallel multi-core copper wire and placed in parallel (2.5mm²) wire core moment of contact arcing.

4 parallel metallic contact arcing test circuit schematic

1 Scope

Part 4 of GB 14287 covers the arcing fault detector, the hardest of the family to build: the device that recognises the current signature of a series or parallel arc - a broken conductor, a loose terminal, a damaged insulation - and distinguishes it from the arcing that normal loads such as motors, dimmers and switching supplies produce all the time. The standard sets the requirements for detection and for non-operation on those normal loads, the test methods with the arc generator, the inspection rules, the marking and the operating instructions, with an informative annex showing typical fault waveforms. Issued on 24 June 2014, in force since 1 June 2015; it is the first edition of this part. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the edition it replaces are taken from there. The clause text, the tables and the numeric limits are not reproduced on this page - they are in the document itself, which is delivered in full in English translation.

GB This section 14287 specifies the terms and definitions arc fault detector, classification, requirements, testing, inspection rules, signs and use Instructions. This section applies install arc fault detector used in industrial and civil buildings 10kW and below electrical circuits. other Apparatus for use in arc fault detector for an electrical fire monitoring, as well as under other environmental arc fault detector with special requirements, Except as otherwise provided by the special requirements of the relevant standards, are also applicable to this section.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version suitable for use herein Member. For undated references,

the latest edition (including any amendments) applies to this document. Part 1

GB 4706.1 Safety of household and similar electrical appliances. General requirements

GB/T 9969 General Instructions industrial products

GB 12978 fire electronic products inspection rules

GB 16838 fire electronic products environment test methods and severities

GB/T 17626.2 Electromagnetic compatibility Testing and measurement techniques -
Electrostatic discharge immunity test

GB/T 17626.3 electromagnetic compatibility test and measurement technology RFEMS test

GB/T 17626.4 Electromagnetic compatibility Testing and measurement techniques -
Electrical fast transient burst immunity test

GB/T 17626.5 electromagnetic compatibility test and measurement technology surge
(impact) immunity test

GB/T 17626.6 Electromagnetic compatibility Testing and measurement techniques
Immunity to conducted disturbances induced field

GB 23757-2009 fire protection requirements for electronic products

3 Terms and Definitions

The following terms and definitions apply to this document.

3.1 Arc fault arcingfault Since the electrical lines or equipment old and damaged insulation, loose electrical connections, air humidity, voltage and current causes such a sharp increase in air Gas breakdown caused by free gas discharge phenomenon.

3.2 Arc fault detector arcingfaultdetector For detecting protected from electrical lines arc fault detector. Category

4 Arc fault detector (hereinafter referred to as the detector) according to work can be divided into.

a) non-independent;

4 Microwave 1100W high fire up and running 10

5 Iron 1100W By adjusting the temperature control knob, Make contacts and breaking temperature 10 times Electronic variable speed hand drill 800W

6 So that the hand drill from the lowest speed in no-load condition To the highest, from highest to lowest and then 2 times reciprocally 7 with electronic ballasts for fluorescent lamps 36W25 cold state up and running 10 8