INTERNATIONAL STANDARD

ISO 7240-31

First edition
2022-09

Fire detection and alarm systems —

Part 31: Resettable line-type heat detectors

Systèmes de détection et d'alarme incendie —

Partie 31: Détecteurs de chaleur en ligne resetable

Reference number
ISO 7240-31:2022(E)

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

Page

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 21, *Equipment for fire protection and fire fighting*, Subcommittee SC 3, *Fire detection and alarm systems.*

A list of all parts in the ISO 7240 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

Resettable line-type heat detectors (RLTHD) have been incorporated into fire alarm systems for a considerable number of years. These detectors are typically used in areas where point-type heat detectors are presented with challenging environmental characteristics and also where access to the detectors can significantly influence the fire alarm system design.

This document gives common requirements for the construction and robustness of line-type heat detectors, as well as for their performance under climatic, mechanical and electrical interference conditions which are likely to occur in the service environment

This document defines the minimum system functionality for RLTHD products. RLTHD are based upon many unique operating principles. It is the intention of this document to define common operating characteristics for each type of RLTHD in conjunction with existing ISO 7240 detector International Standards, so that resettable line-type heat detectors have a response behaviour comparable to that of point-type heat detectors.

Generally, there are three functional principles employed by RLTHD: non-integrating systems, integrating systems and ror-only detectors; separate subclasses have been created for each of these systems.

Fire detection and alarm systems —

Part 31: Resettable line-type heat detectors

1 Scope

This document applies to resettable line-type heat detectors consisting of a sensing element distributed either continuously or discretely at close intervals along its length and connected to a sensor control unit, either directly or through an interface module, intended for use in fire detection and fire alarm systems installed in and around buildings and other civil engineering works. Examples of such technology are an optical fibre, a pneumatic tube, or an electrical sensor cable

This document specifies the requirements and performance criteria, the corresponding test methods, and provides for the assessment.

This document also covers resettable line-type heat detectors intended for use in the local protection of plants and equipment.

This document does not cover non-resettable line-type heat detectors that can only respond once and are based on fixed temperature electrical cables.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 7240-1, *Fire detection and alarm systems — Part 1: General and definitions*

IEC 60068-2-1, *Environmental testing — Part 2-1: Tests — Test A: Cold*

IEC 60068-2-2, *Environmental testing — Part 2-2: Tests — Test B: Dry heat*

IEC 60068-2-6, *Environmental testing — Part 2-6: Tests — Test Fc: Vibration (sinusoidal)*

IEC 60068-2-27, *Environmental testing — Part 2-27: Tests — Test Ea and guidance: Shock*

IEC 60068-2-42, *Environmental testing — Part 2-42: Tests — Test Kc: Sulphur dioxide test for contacts and connections*

IEC 60068-2-75, *Environmental testing — Part 2-75: Tests — Test Eh: Hammer tests*

IEC 60068-2-78, *Environmental testing — Part 2-78: Tests — Test Cab: Damp heat, steady state*

IEC 62599-2, *Alarm systems — Part 2: Electromagnetic compatibility — Immunity requirements for components of fire and security alarm systems*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 7240-1 and the following apply.