EESTI STANDARD EVS-EN 54-17:2006

Automaatne tulekahjusignalisatsioonisüsteem. Osa 17: Lühisisolaatorid

Fire detection and fire alarm systems - Part 17: Short-circuit isolators

EESTI STANDARDIKESKUS

EESTI STANDARDI EESSÕNA **NATIONAL FOREWORD**

Käesolev Eesti standard EVS-EN 54-17:2006 sisaldab Euroopa standardi EN 54-17:2005 ingliskeelset teksti. Käesolev dokument on jõustatud 27.02.2006 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes. Standard on kättesaadav Eesti standardiorganisatsioonist.	This Estonian standard EVS-EN 54-17:2006 consists of the English text of the European standard EN 54-17:2005. This document is endorsed on 27.02.2006 with the notification being published in the official publication of the Estonian national standardisation organisation. The standard is available from Estonian standardisation organisation.

Käsitlusala: This European Standard specifies requirements, test methods and performance criteria for shortcircuit isolators, for use in fire detection and fire alarm systems for buildings (see EN 54-1).	**Scope:** This European Standard specifies requirements, test methods and performance criteria for shortcircuit isolators, for use in fire detection and fire alarm systems for buildings (see EN 54-1).

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This European Standard was approved by CEN on 26 October 2005.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

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Foreword

This European Standard (EN 54-17:2005) has been prepared by Technical Committee CEN/TC 72 “Fire detection and fire alarm systems”, the secretariat of which is held by BSI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by June 2006, and conflicting national standards shall be withdrawn at the latest by December 2008.

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this European Standard.

This European Standard has been prepared in co-operation with the CEA (Comité Européen des Assurances) and with EURALARM (Association of European Manufacturers of Fire and Intruder Alarm Systems).

Information on the relationship between this European Standard and other standards of the EN 54 series is given in Annex A of EN 54-1:1996.

EN 54 “Fire detection and fire alarm systems” consists of the following parts:

Part 1: Introduction

Part 2: Control and indicating equipment

Part 3: Fire alarm devices – Sounders

Part 4: Power supply equipment

Part 5: Heat detectors - Point detectors

Part 7: Smoke detectors - Point detectors using scattered light, transmitted light or ionization

Part 10: Flame detectors - Point detectors

Part 11: Manual call points

Part 12: Smoke detectors - Line detectors using an optical light beam

Part 13: Compatibility assessment of system components

Part 14: Guidelines for planning, design, installation, commissioning, use and maintenance

Part 15: Point type multi-sensor fire detectors

Part 16: Voice alarm control and indicating equipment

Part 17: Short-circuit isolators

Part 18: Input/output devices

Part 20: Aspirating smoke detectors

Part 21: Alarm transmission and fault warning routing equipment

Part 22: Line-type heat detectors

Part 23: Fire alarm devices - Visual alarms

Part 24: Components of voice alarm systems – Loudspeakers

Part 25: Components using radio links and system requirements

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

Introduction

The purpose of short-circuit isolators is to limit the consequences of low parallel resistance faults between the lines of a transmission path of a fire detection and fire alarm system. This is normally achieved by connecting the transmission path in a loop configuration, separating sections of the loop with short-circuit isolators and introducing a means of detecting the presence of a fault, if its consequences (e.g. reduction in the line voltage) jeopardises the correct operation of components on the transmission path. The faulty section of the loop can then be switched out, between a pair of short-circuit isolators, allowing the rest of the loop to continue to function correctly.

It is recognised that it is not possible for this component standard to specify all of the requirements for the function of a short-circuit isolator in a system. The requirements for the functioning of a short-circuit isolator are dependent on the system operation, the other components associated with the transmission path (e.g. the control and indicating equipment and detectors.) and the transmission path parameters (e.g. line impedance and line loads) and will have to be verified in a system test.

However, this component standard includes:

— a requirement that the manufacturer shall give all of the specifications, for the short-circuit isolator, needed by system designers to use the device correctly, in accordance with the system requirements,

NOTE The system designer should ensure that only those short-circuit isolators having the necessary performance are chosen to meet the specific requirements of a given system design.

— tests to verify that the short-circuit isolator functions in accordance with these manufacturer's specifications, and

— tests to verify the stability of the short-circuit isolator with respect to environmental and electromagnetic compatibility (EMC) conditions.

Due to the many different concepts that can be used for the operation of short-circuit isolators, it is not possible to define a precise functional test procedure applicable to all types. Instead, this European Standard requires that a functional test procedure is developed to verify the manufacturer's specification and lists the most important points that have to be verified. To assist in developing such test procedures, some example procedures are given in an informative annex.

In view of the above, it is important that, in addition to meeting the requirements of this European Standard, short-circuit isolators are shown to operate correctly within the types of systems with which they are intended to be used.

1 Scope

This European Standard specifies requirements, test methods and performance criteria for short-circuit isolators, for use in fire detection and fire alarm systems for buildings (see EN 54-1).

Means of isolation or protection incorporated within control and indicating equipment (item B in Figure 1 of EN 54-1:1996) are not covered by this European Standard.

2 Normative references

The following referenced documents are indispensable for the application of this European Standard. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 54-1:1996, *Fire detection and fire alarm systems — Part 1: Introduction*

EN 50130-4:1995, *Alarm systems — Part 4: Electromagnetic compatibility - Product family standard: Immunity requirements for components of fire, intruder and social alarm systems*

EN 60068-1, *Environmental testing — Part 1: General and guidance (IEC 60068-1:1988 + Corrigendum 1988 + A1:1992)*

EN 60068-2-1, *Environmental testing — Part 2: Tests — Tests A: Cold (IEC 60068-2-1:1990)*

EN 60068-2-2, *Basic environmental testing procedures — Part 2: Tests — Tests B: Dry heat (IEC 60068-2-2:1974 + IEC 60068-2-2A:1976)*

EN 60068-2-6, *Environmental testing — Part 2: Tests — Test Fc: Vibration (sinusoidal) (IEC 60068-2-6:1995 + Corrigendum 1995)*

EN 60068-2-27, *Basic environmental testing procedures — Part 2: Tests — Test Ea and guidance: Shock (IEC 60068-2-27:1987)*

EN 60068-2-30, *Environmental testing — Part 2: Tests — Test Db and guidance: Damp heat, cyclic (12 + 12 hour cycle) (IEC 60068-2-30:1980 + A1:1985)*

EN 60068-2-42, *Environmental testing — Part 2-42: Tests — Test Kc: Sulphur dioxide test for contacts and connections (IEC 60068-2-42:2003)*

EN 60068-2-78, *Environmental testing — Part 2-78: Tests — Test Cab: Damp heat, steady state (IEC 60068-2-78:2001)*

ISO 209-1:1989, *Wrought aluminium and aluminium alloys — Chemical composition and forms of products — Part 1: Chemical composition*

3 Terms and definitions

For the purposes of this European Standard, the terms and definitions given in EN 54-1:1996 and the following apply.

3.1
short-circuit isolator
device, which may be connected into a transmission path of a fire detection and fire alarm system, to limit the consequences of low parallel resistance faults between the lines of this transmission path