ISO 12239:2003-12 (E)

Fire detection and fire alarm systems - Smoke alarms

Contents

Page

Foreword v

Introduction vi

1 Scope 1

2 Normative references 1

3 Terms and definitions 2

4 General requirements 3
4.1 Compliance 3
4.2 Alarm-condition aural indicator 4
4.3 Alarm-condition visual indicator -- Optional function 4
4.4 Mains-on visual indicator 4
4.5 Fault-condition visual indicator -- Optional function 4
4.6 Connection of external ancillary devices 4
4.7 Means of calibration 4
4.8 User-replaceable components 4
4.9 Primary power source 4
4.10 Standby power source 5
4.11 Electrical safety requirements 6
4.12 Test facility 6
4.13 Terminals for external conductors 6
4.14 Smoke-alarm signals 6
4.15 Battery removal indication 7
4.16 Battery connections 7
4.17 Protection against the ingress of foreign bodies 7
4.18 Interconnectable smoke alarms -- Optional function 7
4.19 Alarm-silence facility -- Optional function 8

5 Tests 8
5.1 General 8
5.2 Directional dependence 10
5.3 Initial sensitivity 12
5.4 Repeatability 12
5.5 Air movement 12
5.6 Dazzling 13
5.7 Dry heat (operational) 14
5.8 Cold (operational) 14
5.9 Damp heat (operational) 15
5.10 Sulfur dioxide (SO2) corrosion 16
5.11 Impact (operational) 17
5.12 Vibration, sinusoidal (operational) 18
5.13 Vibration, sinusoidal (endurance) 19
5.14 Extended temperature (operational) -- Optional function 20
5.15 Electromagnetic compatibility (EMC) immunity tests (operational) 21
5.16 Fire sensitivity 21
5.17 Battery-low condition 23
5.18 85 dB(A) Sound output -- Optional function 24
5.19 70 dB(A) Sound output -- Optional function 24
5.20 Sounder durability 25

5.21 Interconnectable smoke alarms 25
5.22 Alarm-silence facility 26
5.23 Variation in supply voltage 27
5.24 Polarity reversal 27

6 Marking and data 28
6.1 Smoke-alarm marking 28
6.2 Packaging marking 29
6.3 Provision of information 29

7 Test report 29

Annex A (normative) Assessment of personal protection against various hazards 30

Annex B (normative) Smoke tunnel for response-threshold value measurement 32

Annex C (normative) Test aerosol for response threshold value measurements 33

Annex D (normative) Smoke-measuring instruments 34

Annex E (normative) Apparatus for dazzling test 38

Annex F (normative) Apparatus for impact test 39

Annex G (normative) Fire test room 41

Annex H (normative) Smouldering pyrolysis wood fire (TF2) 43

Annex I (normative) Glowing smouldering cotton fire (TF3) 46

Annex J (normative) Flaming plastics (polyurethane) fire (TF4) 48

Annex K (normative) Flaming liquid (n-heptane) fire (TF5) 50

Annex L (informative) Information concerning the construction of the smoke tunnel 52

Annex M (informative) Information concerning the construction of the measuring ionization chamber 54