

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 (SO ₂) 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