

ISO 7240-12:2022-06 (E)

Fire detection and alarm systems - Part 12: Line type smoke detectors using a transmitted optical beam

Contents		Page
Foreword.....		vi
Introduction.....		vii
1	Scope	1
2	Normative references	1
3	Terms and definitions	2
4	Requirements	3
4.1	Conformance.....	3
4.2	Individual alarm indication.....	3
4.3	Connection of ancillary devices.....	4
4.4	Monitoring of detachable detectors and connections.....	4
4.5	Manufacturer's adjustments.....	4
4.6	On-site adjustment of response threshold value.....	4
4.7	Protection of optical components.....	4
4.8	Limit of compensation.....	4
4.9	Fault signalling.....	5
4.10	Software-controlled detectors.....	5
4.10.1	General.....	5
4.10.2	Software documentation.....	5
4.10.3	Software design.....	6
4.10.4	Storage of programs and data.....	6
5	Test methods	6
5.1	General.....	6
5.1.1	Atmospheric conditions for tests.....	6
5.1.2	Mounting arrangements.....	6
5.1.3	Operating conditions for tests.....	6
5.1.4	Tolerances.....	7
5.1.5	Measurement of response value.....	7
5.1.6	Provision for tests.....	8
5.1.7	Test schedule.....	8
5.1.8	Test report.....	9
5.2	Reproducibility.....	9
5.2.1	Object of test.....	9
5.2.2	Test procedure.....	9
5.2.3	Requirements.....	9
5.3	Repeatability.....	9
5.3.1	Object of test.....	9
5.3.2	Test procedure.....	9
5.3.3	Requirements.....	10
5.4	Alignment dependence.....	10
5.4.1	Object of test.....	10
5.4.2	Test procedure.....	10
5.4.3	Requirements.....	11
5.5	Variation of supply parameters.....	11
5.5.1	Object.....	11
5.5.2	Test procedure.....	11
5.5.3	Requirements.....	11
5.6	Rapid changes in attenuation.....	11

5.6.1	Object of test	11
5.6.2	Test procedure	11
5.6.3	Requirements	12
5.7	Slow changes in attenuation	12
5.7.1	Object of test	12
5.7.2	Test procedure	12
5.7.3	Requirements	12
5.8	Optical path length dependence	13
5.8.1	Object of test	13
5.8.2	Test procedure	13
5.8.3	Requirements	13
5.9	Fire sensitivity	13
5.9.1	Object of test	13
5.9.2	Test procedure	13
5.9.3	Requirements	15
5.10	Stray light	15
5.10.1	Object of test	15
5.10.2	Test procedure	15
5.10.3	Requirements	16
5.11	Dry heat (operational)	16
5.11.1	Object of test	16
5.11.2	Test procedure	16
5.11.3	Requirements	17
5.12	Cold (operational)	17
5.12.1	Object of test	17
5.12.2	Test procedure	17
5.12.3	Requirements	18
5.13	Damp heat, steady-state (operational)	18
5.13.1	Object of the test	18
5.13.2	Test procedure	18
5.13.3	Requirements	19
5.14	Damp heat, steady-state (endurance)	19
5.14.1	Object of test	19
5.14.2	Test procedure	19
5.14.3	Requirements	20
5.15	Vibration, sinusoidal (endurance)	20
5.15.1	Object of test	20
5.15.2	Test procedure	20
5.15.3	Requirements	21
5.16	Electromagnetic compatibility (EMC), immunity tests (operational)	21
5.17	Sulfur dioxide, SO ₂ , corrosion (endurance)	22
5.17.1	Object of test	22
5.17.2	Test procedure	22
5.17.3	Requirements	22
5.18	Impact (operational)	23
5.18.1	Object of test	23
5.18.2	Test procedure	23
5.18.3	Requirements	23
6	Test report	24
7	Marking	24
8	Data	25
Annex A (informative) Compensation for detector drift		26
Annex B (normative) Bench for response threshold value measurements		31
Annex C (normative) Fire test room		33
Annex D (normative) Smouldering pyrolysis wood fire (TF2)		35
Annex E (normative) Glowing smouldering cotton fire (TF3)		38
Annex F (normative) Flaming plastics (polyurethane) fire (TF4)		41
Annex G (normative) Flaming liquid (<i>n</i>-heptane) fire (TF5)		43

Annex H (normative) Smoke-measuring instruments	45
Annex I (normative) Apparatus for stray light	48
Annex J (informative) Information concerning the construction of the measuring ionization chamber	50
Bibliography	53