

# ISO 7240-15:2014-07 (E)

## Fire detection and alarm systems - Part 15: Point-type fire detectors using smoke and heat sensors

---

<b>Contents</b>		<b>Page</b>
Foreword .....		v
Introduction .....		vii
<b>1</b>	<b>Scope .....</b>	<b>1</b>
<b>2</b>	<b>Normative references .....</b>	<b>1</b>
<b>3</b>	<b>Terms, definitions, and abbreviations .....</b>	<b>2</b>
3.1	Terms and definitions .....	2
3.2	Abbreviated terms .....	2
<b>4</b>	<b>Requirements .....</b>	<b>2</b>
4.1	Compliance .....	2
4.2	Design considerations .....	2
4.3	Smoke-response value of detectors using scattered or transmitted light .....	2
4.4	Individual alarm indication .....	3
4.5	Indication of other conditions .....	3
4.6	Connection of ancillary devices .....	3
4.7	Monitoring of detachable detectors .....	3
4.8	Manufacturer's adjustments .....	3
4.9	On-site adjustment of response behaviour .....	3
4.10	Response to slowly developing fires .....	4
4.11	Protection against ingress of foreign bodies .....	4
4.12	Software-controlled detectors .....	4
<b>5</b>	<b>Tests .....</b>	<b>6</b>
5.1	General .....	6
5.2	Repeatability of smoke response .....	9
5.3	Directional dependence of smoke response .....	10
5.4	Directional dependence of heat response .....	11
5.5	Reproducibility of smoke response .....	11
5.6	Reproducibility of heat response .....	12
5.7	Lower limit of heat response .....	12
5.8	Air movement .....	13
5.9	Dazzling .....	14
5.10	Variation in supply parameters (voltage) .....	14
5.11	Dry heat (operational) .....	15
5.12	Cold (operational) .....	16
5.13	Damp heat, cyclic (operational) .....	17
5.14	Damp heat, steady-state (endurance) .....	18
5.15	Sulfur dioxide (SO <sub>2</sub> ) corrosion (endurance) .....	19
5.16	Shock (operational) .....	20
5.17	Impact (operational) .....	21
5.18	Vibration, sinusoidal (operational) .....	22
5.19	Vibration, sinusoidal (endurance) .....	24
5.20	Electromagnetic compatibility (EMC) .....	25
5.21	Detectors with more than one smoke sensor -- Optional test .....	25
5.22	Fire sensitivity .....	26
<b>6</b>	<b>Test report .....</b>	<b>28</b>

<b>7</b>	<b>Marking .....</b>	<b>28</b>
<b>8</b>	<b>Data .....</b>	<b>29</b>
	<b>Annex A (normative) Compensation for detector drift .....</b>	<b>30</b>
	<b>Annex B (normative) Smoke tunnel for smoke-response value measurements .....</b>	<b>35</b>
	<b>Annex C (normative) Heat tunnel for heat-response value measurements .....</b>	<b>40</b>
	<b>Annex D (normative) Apparatus for the dazzling test .....</b>	<b>41</b>
	<b>Annex E (normative) Apparatus for the impact test .....</b>	<b>42</b>
	<b>Annex F (normative) Fire test room .....</b>	<b>44</b>
	<b>Annex G (normative) Open cellulosic (wood) fire (TF1) .....</b>	<b>46</b>
	<b>Annex H (normative) Smouldering (pyrolysis) wood fire (TF2) .....</b>	<b>48</b>
	<b>Annex I (normative) Glowing smouldering cotton fire (TF3) .....</b>	<b>51</b>
	<b>Annex J (normative) Flaming plastics (polyurethane) fire (TF4) .....</b>	<b>53</b>
	<b>Annex K (normative) Flaming liquid (n-heptane) fire (TF5) .....</b>	<b>56</b>
	<b>Annex L (normative) Low-temperature black-smoke liquid (decalin) fire (TF8) .....</b>	<b>58</b>
	<b>Annex M (informative) Construction of the measuring ionization chamber .....</b>	<b>60</b>
	<b>Annex N (informative) Construction of the heat tunnel .....</b>	<b>63</b>