

# DIN EN 54-21:2006-08 (E)

## Fire detection and fire alarm systems - Part 21: Alarm transmission and fault warning routing equipment

---

<b>Contents</b>		<b>Page</b>
Foreword .....		4
<b>1</b>	<b>Scope .....</b>	<b>6</b>
<b>2</b>	<b>Normative references .....</b>	<b>6</b>
<b>3</b>	<b>Terms, definitions and abbreviations .....</b>	<b>7</b>
<b>3.1</b>	<b>Terms and definitions .....</b>	<b>7</b>
<b>3.2</b>	<b>Abbreviations .....</b>	<b>7</b>
<b>4</b>	<b>General requirements .....</b>	<b>7</b>
<b>4.1</b>	<b>General .....</b>	<b>7</b>
<b>4.2</b>	<b>Compliance .....</b>	<b>7</b>
<b>5</b>	<b>Functional requirements .....</b>	<b>7</b>
<b>5.1</b>	<b>Alarm transmission routing equipment .....</b>	<b>7</b>
<b>5.2</b>	<b>Fault warning routing equipment .....</b>	<b>7</b>
<b>5.3</b>	<b>Indication of signals .....</b>	<b>8</b>
<b>6</b>	<b>Alarm transmission and fault warning systems requirements .....</b>	<b>8</b>
<b>7</b>	<b>Design requirements .....</b>	<b>8</b>
<b>7.1</b>	<b>General requirements and manufacturer's declarations .....</b>	<b>8</b>
<b>7.2</b>	<b>Documentation .....</b>	<b>9</b>
<b>7.3</b>	<b>Mechanical design requirements .....</b>	<b>9</b>
<b>7.4</b>	<b>Electrical and other design requirements .....</b>	<b>10</b>
<b>7.5</b>	<b>Integrity of transmission paths .....</b>	<b>10</b>
<b>7.6</b>	<b>Accessibility of indications and controls .....</b>	<b>10</b>
<b>7.7</b>	<b>Indications by means of light-emitting indicators .....</b>	<b>10</b>
<b>7.8</b>	<b>Colours of indications .....</b>	<b>10</b>
<b>7.9</b>	<b>Testing of indicators .....</b>	<b>10</b>
<b>7.10</b>	<b>Additional design requirements for software-controlled routing equipment .....</b>	<b>11</b>
<b>7.10.1</b>	<b>General requirements and manufacturer's declarations .....</b>	<b>11</b>
<b>7.10.2</b>	<b>Software documentation .....</b>	<b>11</b>
<b>7.10.3</b>	<b>Software design .....</b>	<b>12</b>
<b>7.10.4</b>	<b>Program monitoring .....</b>	<b>12</b>
<b>7.10.5</b>	<b>The storage of programs and data .....</b>	<b>12</b>
<b>7.10.6</b>	<b>The monitoring of memory contents .....</b>	<b>13</b>
<b>8</b>	<b>Marking .....</b>	<b>13</b>
<b>9</b>	<b>Power supply .....</b>	<b>13</b>
<b>10</b>	<b>Tests .....</b>	<b>13</b>
<b>10.1</b>	<b>General .....</b>	<b>13</b>
<b>10.1.1</b>	<b>Standard atmospheric conditions for testing .....</b>	<b>13</b>
<b>10.1.2</b>	<b>Specimen configuration .....</b>	<b>14</b>
<b>10.1.3</b>	<b>Mounting and orientation .....</b>	<b>14</b>
<b>10.1.4</b>	<b>Electrical connection .....</b>	<b>14</b>
<b>10.1.5</b>	<b>Provisions for tests .....</b>	<b>14</b>
<b>10.2</b>	<b>Functional test .....</b>	<b>14</b>

10.2.1	Object of the test .....	14
10.2.2	Test schedule .....	14
10.3	Environmental tests .....	15
10.3.1	General .....	15
10.3.2	Tests for one specimen .....	16
10.3.3	Tests for more than one specimen .....	16
10.3.4	Requirements .....	16
10.4	Cold (operational) .....	16
10.4.1	Object of the test .....	16
10.4.2	Test procedure .....	16
10.5	Damp heat, steady state (operational) .....	17
10.5.1	Object of the test .....	17
10.5.2	Test procedure .....	17
10.6	Impact (operational) .....	18
10.6.1	Object of the test .....	18
10.6.2	Test procedure .....	18
10.7	Vibration, sinusoidal (operational) .....	19
10.7.1	Object of the test .....	19
10.7.2	Test procedure .....	19
10.8	Electromagnetic (EMC) immunity tests (operational) .....	20
10.9	Supply voltage variation (operational) .....	21
10.9.1	Object of the test .....	21
10.9.2	Test procedure .....	21
10.10	Damp heat, steady state (endurance) .....	21
10.10.1	Object of the test .....	21
10.10.2	Test procedure .....	21
10.11	Vibration, sinusoidal (endurance) .....	22
10.11.1	The object of the test .....	22
10.11.2	Test procedure .....	22
<b>Annex A (normative) Performance requirements for alarm and fault warning transmission systems</b> .....		<b>24</b>
<b>Annex B (normative) Verification of performance requirements for alarm and fault warning transmission systems</b> .....		<b>25</b>
B.1	General .....	25
B.2	Transmission time .....	25
B.3	Reporting time .....	25
B.4	Availability .....	25
<b>Annex C (informative) Design requirements for software controlled routing equipments</b> .....		<b>26</b>
<b>Annex ZA (informative) Clauses of this European Standard addressing the provisions of the EU Construction Products Directive (89/106/EEC)</b> .....		<b>27</b>
ZA.1	Scope and relevant clauses .....	27
ZA.2	Procedures for the attestation of conformity of alarm transmission and fault warning routing equipment covered by this standard .....	28
ZA.2.1	System of attestation of conformity .....	28
ZA.2.2	Evaluation of conformity .....	28
ZA.3	CE marking and labelling and accompanying documentation .....	32
ZA.4	EC certificate and declaration of conformity .....	34