Deutsches Institut für Bautechnik

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European Technical Assessment Body for construction products

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General Part

Technical Assessment Body issuing the European Technical Assessment:	Deutsches Institut für Bautechnik
Trade name of the construction product	d-LIST System
Product family to which the construction product belongs	Resettable line-type heat detectors
Manufacturer	LISTEC GmbH Am Sandberg 34 84424 Isen DEUTSCHLAND
Manufacturing plant	LISTEC GmbH Am Sandberg 34 84424 Isen
This European Technical Assessment contains	8 pages
This European Technical Assessment is issued in accordance with Regulation (EU) No 305/2011, on the basis of	100031-00-1103

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Specific Part

1 Technical description of the product

This European technical approval applies to the resettable line-type heat detectors "d-LIST", which consist of a sensing element using an electronic sensor cable connected to a sensor control unit.

The electronic sensor cable consists of 2-wire ribbon conductor and temperature sensors connected to it with individual addresses. The digital temperature data transmission allows a maximum cable length per connection of 320 m at 10 m sensor distance or 100 m at 1 m sensor distance.

Depending on the area of application, the sensor distance can be freely selected. If necessary, the cable can also be branched several times. The sensors have fixed addresses so that their physical location is precisely defined. The location of the sensors is marked on the cable jacket with a consecutive three- to four-digit number. In addition, the cable number is also stated with each sensor imprint so that every cable and every sensor remain traceable.

A completely closed aluminium shield protects the cable from electromagnetic influences. The cable jacket is made of flame-retardant, halogen-free material.

Regardless of the cable length and the number of sensors, the measured temperatures at terminal A/B are recorded with a resolution of 0,0625°C and the repeatability is ±0,0625 K.

The sensor control unit supplies the d-LIST sensor cable with a voltage of +5 V DC, carries out a cyclic query and records the temperatures received and evaluates the temperatures according to various criteria.

The interface module type XLM 35[1] may be used to connect the resettable line-type heat detector to a control and indicating equipment.

The Resettable line-type heat detectors d-LIST is classified for heat response classes A1N, A2N, A1I und A2I (Room protection) as well as BN, CN, BI und CI (Local protection) according to EAD 100031-00-11.03 in conjunction with EN 54-22:2020. The sensing element, the sensor control unit and the functional elements are classified in environmental group III.

2 Specification of the intended use in accordance with the applicable European Assessment Document

Resettable line-type heat detectors are intended for use in fire detection and fire alarm systems installed in and around buildings and other civil engineering works. These detectors are typically intended to be used in areas where point type heat detectors are presented with challenging environmental characteristics and also where access to the detectors may significantly influence the fire alarm system design.

The products are intended to be used for room protection (see EN 54-22, clauses 3.1.5 and 3.1.10), for local protection or for both. In addition, distinction is made between integrating and non-integrating line-type heat detectors.

The d-LIST sensor cable can be used in a temperature range of -40°C to +85°C. The cable and its components can withstand temperatures of up to +120°C for a short time.

NOTE: Other requirements and other EU Directives may be applicable to the product(s) falling within the scope of this document.

[1] Manufacturer: Securiton AG, Zollikofen

3 Performance of the Resettable line-type heat detector and references to the methods used for its assessment

3.1 Safety in case of fire (BWR 2)

Essential characteristic	Performance description	achieved performance
Nominal activation conditions/sensitivity		
Individual alarm indication	Visibility from 6 m away at an ambient lighting of 500 lux	Yes
Signaling	Correct signaling in the case of – Alarm – Sensing element faults – Low voltage	Yes
Repeatability	For heat response class A1N – $t(3)_{max} : t(3)_{min}$ – $t(20)_{max} : t(20)_{min}$	 1,03 1,03
Reproducibility	For heat response class A1N and A1I – $t(3)_{max} : t(3)_{min}$ – $t(20)_{max} : t(20)_{min}$ For Heat response class CN and CI – $t(3)_{max} : t(3)_{min}$ – $t(20)_{max} : t(20)_{min}$	 1,24 1,16 1,25 1,21
Operational reliability		
Connection of ancillary devices	detector works correctly in the case of – open-circuit – short-circuit at the connections for ancillary devices	 Yes Yes
Manufacturer's adjustments	It is not possible to change the manufacturer's settings (except by special means).	Yes
Assessment of software-controlled detectors	The characteristics according to EN 54-22, clause 4.3.3, apply.	Yes
Sensing element fault	Fault conditions were detected and signalled within 300 s	Yes
On-site adjustment of response behaviour	On-site settings can only be made using a code or special tools	Yes
Maximum ambient temperature test (sensing element)	The detector works correctly even at the high ambient temperatures as defined in EN 54-22, clauses 5.3.6.2 and 5.3.6.3. – A1N, A2N, A1I, A2I – BN, BI – CN, CI	 Yes Yes Yes
Tolerance to supply voltage		
Variation in supply parameters	For heat response class A1N – $t(3)_{max} : t(3)_{min}$	 1,05

Essential characteristic	Performance description	achieved performance
Low voltage fault	If the minimum supply voltage specified by the manufacturer is not reached by 15%, a fault condition is signaled.	Yes, within 100 s
Performance parameters under fire conditions		
Fire sensitivity for room protection application	Response times for different test fires and heat response classes according to EN 54-22	
	– TF6S	
	– For A1N (10 m sensor distance)	130 s
	– For A1N (1 m sensor distance)	99 s
	– For A1N (2 m sensor distance)	120 s
	– For A1I (5 m sensor distance)	126 s
	– For A2N (1 m sensor distance)	154 s
	– For A2N (2 m sensor distance)	164 s
	– For A2I (1 m sensor distance)	146 s
	– TF6	
	– For A1N (10 m sensor distance)	88 s
	– For A1N (1 m sensor distance)	71 s
	– For A1N (2 m sensor distance)	81 s
	– For A1I (5 m sensor distance)	103 s
	– For A2N (1 m sensor distance)	121 s
	– For A2N (2 m sensor distance)	131 s
	– For A2I (1 m sensor distance)	123 s
	– TF6F	
	– For A1N (10 m sensor distance)	71 s
	– For A1N (1 m sensor distance)	100 s
	– For A1N (2 m sensor distance)	110 s
	– For A1I (5 m sensor distance)	85 s
	– For A2N (1 m sensor distance)	91 s
	– For A2N (2 m sensor distance)	101 s
	– For A2I (1 m sensor distance)	105 s
Static response temperature test	Static response temperature for different heat response classes according to EN 54-22	
	– Room protection	
	– For A1N	58,9 °C
	– For A1I	58,8 °C
	– For A2N	59,2 °C
	– For A2I	58,6 °C
	– Local protection	
	– For BN	74,7 °C
	– For BI	70,5 °C
	– For CN	91,9 °C

Essential characteristic	Performance description	achieved performance
	– For CI	85,6 °C
Durability of nominal activation conditions/sensitivity		
Temperature resistance		
– Dry heat (operational) for sensor control unit	– Alarm or fault signal during the period that the temperature is increasing to the stabilization temperature or during the stabilized period – Alarm when simulated – Alarm during functional test – $t(3)_{max} : t(3)_{min}$	No Yes Yes 1,08
– Dry heat (endurance) for sensor control unit and sensing element	– An alarm or fault signal was given after powering at the end of the conditioning and recovery periods – $t(3)_{max} : t(3)_{min}$	No 1,15
– Cold (operational) for sensing element	– An alarm or fault signal was given during the period of the temperature decreasing up to the stabilization temperature or during the stabilized period – $t(3)_{max} : t(3)_{min}$	No 1,09
– Cold (operational) for sensor control unit	– An alarm or fault signal was given during the period that the temperature is decreasing to the stabilization temperature or during the stabilized period. – Alarm during the functional test – $t(3)_{max} : t(3)_{min}$	No Yes 1,09
Humidity resistance		
– Damp heat, steady state (endurance) for sensor control unit and sensing element	– An alarm or fault signal was given after powering at the end of the conditioning and recovery periods – $t(3)_{max} : t(3)_{min}$	No 1,01
– Damp heat, cyclic (operational) for sensing element	– An alarm or fault signal was given during the conditioning and the following recovering period – $t(3)_{max} : t(3)_{min}$	No 1,03
– Damp heat, cyclic (operational) for sensor control unit	– An alarm or fault signal was given during the conditioning and the following recovering period – Alarm during the functional test – $t(3)_{max} : t(3)_{min}$	No Yes 1,03
– Damp heat, steady state (operational) for sensor control unit	– An alarm or fault signal was given during the conditioning and the following recovering period – Alarm during the functional test – $t(3)_{max} : t(3)_{min}$	Not applicable to environmental group II and III

Essential characteristic	Performance description	achieved performance
– Damp heat, cyclic (endurance) for sensor control unit and sensing element	– An alarm or fault signal was given after powering at the end of the conditioning and recovery periods – $t(3)_{max} : t(3)_{min}$	No 1,20
Shock and vibration resistance		
– Shock (operational) for sensor control unit	– An alarm or fault signal was given during conditioning and the further 2 min – $t(3)_{max} : t(3)_{min}$	No 1,07
– Impact (operational) for sensor control unit	– An alarm or fault signal was given during conditioning and the further 2 min – $t(3)_{max} : t(3)_{min}$	No 1,08
– Impact (operational) for sensing element	– An alarm or fault signal was given during conditioning and the further 2 min – Visible cracking or cutting of the sheath – $t(3)_{max} : t(3)_{min}$	No No 1,04
– Vibration, sinusoidal (operational) for sensor control unit	– An alarm or fault signal was given during conditioning – $t(3)_{max} : t(3)_{min}$	No 1,07
– Vibration, sinusoidal (operational) for sensing element	– An alarm or fault signal was given during conditioning – $t(3)_{max} : t(3)_{min}$	No 1,07
– Vibration, sinusoidal (endurance) for sensor control unit	– An alarm or fault signal was given after powering at the end of the conditioning – $t(3)_{max} : t(3)_{min}$	No 1,07
– Vibration, sinusoidal (endurance) for sensing element	– An alarm or fault signal was given after powering at the end of the conditioning. – $t(3)_{max} : t(3)_{min}$	No 1,07
Corrosion resistance		
– Sulphur dioxide (SO_2) corrosion (endurance) for sensing element	– An alarm or fault signal was given during the conditioning and the following recovering period. – $t(3)_{max} : t(3)_{min}$	No 1,06
– Sulphur dioxide (SO_2) corrosion (endurance) for sensor control unit	– An alarm or fault signal was given during the conditioning and the following recovering period. – $t(3)_{max} : t(3)_{min}$	No 1,06
Electrical stability		
– Electromagnetic compatibility (EMC), immunity tests (operational)	– The criteria for compliance specified in EN 50130-4 have been met. – An alarm or fault signal was given during the conditioning. – $t(3)_{max} : t(3)_{min}$	Yes No 1,07

Essential characteristic	Performance description	achieved performance
Reaction to fire (according to EN 13501-1) see following table		

Reaction to fire of the used materials

Component	Material	Class acc. EN 13501		Class acc. UL
		part 1	part 6	
electrical sensor cable	Not specified.	No performance assessed.		
Housing of the sensor control unit.	Aluminium	A1		
Connection box CBO 15	Glass-fibre reinforced polycarbonate			UL 94 V-2

3.2 Hygiene, health and the environment (BWR 3)

No performance assessed.

4 Assessment and verification of constancy of performance (AVCP) system applied, with reference to its legal base

In accordance with EAD No. 100031-00-1103, the applicable European legal act is: 96/577/EC, as amended by Commission Decision 2002/592/EC.

The system to be applied is: 1

5 Technical details necessary for the implementation of the AVCP system, as provided for in the applicable EAD

Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited with Deutsches Institut für Bautechnik.

The manufacturer shall provide installation instructions and maintenance instructions for every resettable line-type heat detector. The maintenance instructions shall clearly indicate which work is to be performed to ensure that the installed resettable line-type heat detector continues to perform its task after long-term use.
The manufacturer shall provide instructions on processing, packaging, transport, storage and use, maintenance and repair of the resettable line-type heat detector.

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beglaubigt:
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