

#### **CERTIFICATE OF CONSTANCY OF PERFORMANCE**

Issued by DBI Certification-UK, approved body No. 8504.

In compliance with UK STATUTORY INSTRUMENT 2020 No. 1359 Construction Products Regulation 2011 (retained EU law EUR 305/2011) as amended by the Construction Products (Amendment etc.) (EU Exit) Regulations 2019 and the Construction Products (Amendment etc.) (EU Exit) Regulations 2020, this certificate applies to the construction product

V-430-S, V-530-S, V-430-VADW, V-530-VADW, V-430-S-VADW, V-530-S-VADW, V-430-SP, V-530-SP, V-430-SP-VADW, V-530-SP-VADW, V-430-SP-VADR, V-530-SP-VADR, V-430-VADR, V-530-VADR, V-530-VADR, V-530-VADR, V-530-EXIC

The product fulfils the essential characteristic:

See Annex 1

Intended use: Applications related to automatic fire alarm systems

Placed on the market under the name or trade mark of:

**Autronica Fire and Security AS** 

Bromstadvegen 59 NO-7047 Trondheim

Norway

and produced in the manufacturing plant:

CPA10058

This attests that all provisions concerning the performance described in Annex ZA of the standard(s)

EN 54-3:2001+A1:2002+A2:2006 : Fire detection and fire alarm systems — Part 3: Fire alarm devices — Sounders

EN 54-5:2017+A1:2018 : Fire detection and fire alarm systems — Part 5: Heat detectors — Point heat

detectors

EN 54-7:2018 : Fire detection and fire alarm systems — Part 7: Smoke detectors — Point smoke

detectors that operate using scattered light, transmitted light or ionization

EN 54-23:2010 : Fire detection and fire alarm systems — Part 23: Fire alarm devices — Visual

alarm devices

under system 1 for the performance set out in this certificate are applied and that the factory production control conducted by the manufacturer is assessed to ensure the

### CONSTANCY OF PERFORMANCE OF THE CONSTRUCTION PRODUCT.

This certificate was first issued on 2022-07-07 and will remain valid as long as neither the harmonised standard, the construction product, the AVCP methods nor the manufacturing conditions in the plant are modified significantly, unless suspended or withdrawn by the notified product certification body.

The attached annexes form part of this certificate.

Date of issue: 2022-07-07.

Steen Nilsson Responsible for evaluation

Merete Poulsen
Responsible for certification decision

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#### Annex 1

#### **EXTENT**

Model	Description	Product compliant with standard
V-430-S	Multicriteria Detector with Sounder	EN 54-3:2001/A1:2002/A2:2006
		EN 54-5:2017/A1:2018
		EN 54-7:2018
V-530-S	Multicriteria Detector SIL2 with Sounder	EN 54-3:2001/A1:2002/A2:2006
		EN 54-5:2017/A1:2018
		EN 54-7:2018
V-430-VADW	Multicriteria Detector with White Beacon	EN 54-5:2017/A1:2018
		EN 54-7:2018
		EN 54-23:2010
V-530-VADW	Multicriteria Detector SIL2 with White Beacon	EN 54-5:2017/A1:2018
		EN 54-7:2018
		EN 54-23:2010
V-430-S-VADW	Multicriteria Detector with Sounder and White Beacon	EN 54-3:2001/A1:2002/A2:2006
		EN 54-5:2017/A1:2018
		EN 54-7:2018
		EN 54-23:2010
V-530-S-VADW	Multicriteria SIL2 Detector with Sounder and White Beacon	EN 54-3:2001/A1:2002/A2:2006
		EN 54-5:2017/A1:2018
		EN 54-7:2018
		EN 54-23:2010
V-430-SP	Multicriteria Detector with Speech	EN 54-3:2001/A1:2002/A2:2006
		EN 54-5:2017/A1:2018
		EN 54-7:2018
V-530-SP	Multicriteria Detector SIL2 with Speech	EN 54-3:2001/A1:2002/A2:2006
		EN 54-5:2017/A1:2018
		EN 54-7:2018
V-430-SP-VADW	Multicriteria Detector with Speech and White Beacon	EN 54-3:2001/A1:2002/A2:2006
		EN 54-5:2017/A1:2018
		EN 54-7:2018
		EN 54-23:2010
V-530-SP-VADW	Multicriteria Detector SIL2 with Speech and White Beacon	EN 54-3:2001/A1:2002/A2:2006
		EN 54-5:2017/A1:2018
		EN 54-7:2018
		EN 54-23:2010
V-430-SP-VADR	Multicriteria Detector with Sounder and Red Beacon	EN 54-3:2001/A1:2002/A2:2006
		EN 54-5:2017/A1:2018
		EN 54-7:2018
		EN 54-23:2010
V-530-SP-VADR	Multicriteria Detector SIL2 with Sounder and Red Beacon	EN 54-3:2001/A1:2002/A2:2006
		EN 54-5:2017/A1:2018
		EN 54-7:2018
		EN 54-23:2010
V-430-S-VADR	Multicriteria Detector with Sounder and Red Beacon	EN 54-3:2001/A1:2002/A2:2006
		EN 54-5:2017/A1:2018
		EN 54-7:2018
		EN 54-23:2010
V-530-S-VADR	Multicriteria Detector SIL2 with Sounder and Red Beacon	EN 54-3:2001/A1:2002/A2:2006
		EN 54-5:2017/A1:2018
		EN 54-7:2018
		EN 54-23:2010
V-430-VADR	Multicriteria Detector with Red Beacon	EN 54-5:2017/A1:2018
		EN 54-7:2018
		EN 54-23:2010

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V-530-VADR	Multicriteria Detector SIL2 with Red Beacon	EN 54-5:2017/A1:2018
		EN 54-7:2018
		EN 54-23:2010
V-430	Multicriteria Detector	EN 54-5:2017/A1:2018
		EN 54-7:2018
		EN 54-23:2010
V-530	Multicriteria Detector SIL2	EN 54-5:2017/A1:2018
		EN 54-7:2018
V-530-EXIA	Multicriteria Detector SIL2 Ex ia	EN 54-5:2017/A1:2018
		EN 54-7:2018
V-530-EXIC	Multicriteria Detector SIL2 Ex ic	EN 54-5:2017/A1:2018
		EN 54-7:2018

Full model codes are defined by the formats V-430-xxxxx-yy/ww/zz and V-530-xxxxx-yy/ww/zz where:

xxxxx = Model as listed in the table above

S, VADW, VADR, S-VADR, SP-VADW, SP-VADR, EXIA, EXIC

yy = Color of housing

Blank = White, BK = Black, CC = Customized Colour

ww = Enabled options

Blank = None, CD = Cover Detection & Self Varify, HS = Extra High Sensitivity\*, DS = Data Subscription, CFxxx = Custom Features (C = A to Z, F = A to Z, xxx = 000 to 999)

\* Note that when the HS = Extra High Sensitivity setting is used, the product is not compliant with EN 54-7:2018. Refer to the manufacturer's documentation.

#### Bases:

V-100 BASE

V-110 BASE SIL2

V-120 BASE SIL2 Ex

Note these bases are Certified under 2531-CPR-CSP11293.

#### **Operating Voltage:**

10 to 27 V DC

#### EN 54-7:2018 Sensivity Classes configurable (panel/confirguration tool)

Sensivity Class	Description
High	Clean environments, for example laboratories, data rooms etc.
Medium	Normal environments, for example offices and hospitals etc.
Low	Industrial environments, for example factories and warehouses etc.

### EN 54-3:2001/A1:2002/A2:2006 Approved Tone Settings

All applicable models indentified above are approved for use with the following tones at maximum volume setting only:

Tone Setti	ng	Tone Description				
Tone 1		Continuous 915Hz				
Tone 2		Dutch Slow Whoop 500-1	1200Hz			
Tone 3		Alternating 730 & 915Hz	(2Hz cy	rcle)		
Tone 4		Continuous 3650Hz				
Tone 5		Whoop 800-970Hz				
Tone 6		DIN tone 1200-500Hz swe	eep (1H	lz)		

#### **DBI Certification-UK Ltd.**

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Model	Setting	Coverage
V430-S-VADR	High	C-3-8
	Medium	C-3-8
	Low	C-3-5
	Open	O-2.5-4
V-430-VADR (Black Lid)		C-3-9
V-430-VADW	High	C-3-12
	Medium	C-3-9
	Low	C-3-6
	Open	0-2.5-4

### **Heat Response Catergory:**

For detector categories with the suffix S or R, additional requirements are needed see 4.4.1 or 4.4.2

Detector Category (Heat Class):	Typical Application Temperature	Maximum Application Temperature °C	Minimum Static Response Temperature °C	Maximum Static Response Temperature °C
A1	25	50	54	65
A1R	25	50	54	65
A1S	25	50	54	65
A2S	25	50	54	70
В	40	65	69	85
С	55	80	84	100

#### Response time limits:

Rate of ris	e of	Cat A1, A1R, A1S			
air temper K min-1	ature	Lowe	r limit	Upe	r limit
		Min	S	Min	S
	1	29	0	40	20
	3	7	13	13	40
	5	4	9	8	20
	10	1	0	4	20
	20		30	2	20
	30		20	1	40

Rate of rise of	Cat A2S, B, C					
air temperature K min-1	Lowe	er limit	Uper limit			
	Min	S	Min	S		
1	29	0	46	0		
3	7	13	16	0		
5	4	9	10	0		
10	2	0	5	30		
20	1	30	3	13		
30		40	2	25		

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### Performance

Essential characteristics	Clauses in EN 54-3:2001	Performance
Performance under fire conditions	4.2, 4.3, 5.2, 5.3	Pass
Operational reliability	4.4, 4.5, 4.6, 5.4	Pass
Durability of operational reliability and response delay; temperature resistance	5.5, 5.7, 5.8, 5.9	Pass
Durability of operational reliability;	5.8, 5.9	Pass
humidity resistance		
Durability of operational reliability; corrosion resistance	5.11	Pass
Durability of operational reliability; vibration resistance	5.12 to 5.15	Pass
Durability of operational reliability; electrical stability	5.16	Pass
Durability of operational reliability; resistance to ingress	5.17	Pass
5.16 applies only to sounders or voice s	ounders with active electronic compo	nents

Essential characteristics	Clauses in EN 54-5:2017/ A1:2018	Regulatory classes	Performance
Operational reliability:			
Position of heat sensitive element	4.2.1		The heat sensitive element(s) or at least part of it, except elements with auxiliary functions (e.g.characteristic correctors), are a distance ≥15mm from the mounting surface of the point heat detector.
Individual alarm indication	4.2.2		Category A1, A1R, A1S, A2S, B, C The heat detector is provided with an integral red visual indicator and can remain identified until the alarm is reset. The visual indicator is visible from a distance of 6 m directly below the point heat detector, in an ambient light intensity up to 500 lx.
Connection of ancillary devices	4.2.3		Open or short circuit failures of connection to ancillary device do not prevent the correct operation of the detector
Monitoring of detachable point heat detectors	4.2.4	A1, A1R, A1S, A2S, B,	A fault condition is signaled when the detector is removed from the mounting base.
Manufacturer's adjustments	4.2.5	C C	It is not possible to change the maufacture's settings expept by special means (e.g. a special code or tool, or by breaking or remove a seal).
Onsite adjustments of response behavior	4.2.6		a)The detector is provided with a provision for an onsite adjustment of the response behavior and the manufacturer declares a corresponding class and adjustment setting: Special code or tool (AS2000 software) is required to change manufacturer's adjustments
Software controlled detectors (when provided)	4.2.7		The software documentation and the software design complies supplied by the manufacturer with the requirements of this standard.
Nominal activation conditions/Sensitivity:			
Directional dependence	4.3.1		The response time of the point dectetor do not unduly depend on the direction of airflow around the point heat detector.

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Response times from typical application temperature   Land	Static response	4.3.2		The response	tomporaturo	c of th	o noint ho	at datactors	c lio
Response times from typical application temperature  Response times from 25 °C 4.3.4  Response times from 4.3.5  Response time 4.3.6  Response time 5 °C 4.3.4  Response time 6 °C 8 °C		4.3.2							3 IIE
Response times from typical application temperature  Response times from 25 °C 4.3.4  Response times from 125 °C 4.3.5  Response times from 125 °C 4.3.5  Response times from 125 °C 4.3.5  Response times from 125 °C 4.3.6  Response times from 125 °C 4.3.6  Response times from 125 °C 4.3.6  No alarm or fault signal was given at high ambient temperatures.  Al 3 °K min-1 *Lower limit, 1 min 20 s and upper limit 12 s.  20 °K min-1 *Lower limit, 1 min 20 s and upper limit 12 s.  20 °K min-1 *Lower limit, 1 min 20 s and upper limit 12 s.  20 °K min-1 *Lower limit, 1 min 20 s and upper limit 12 so min 15 specified in Table 2 above.  Response delay (response time):  Additional test for suffix 5 point heat detectors  Al 3 °K min-1 *Lower limit, 1 min 20 s and upper limit 15 specified in Table 2 above.  Suffix 5 point heat detector did not exceed the lowe ilmits of response time during the transer period or during the 10 min exposure below.  Point heat detector temperature °C response time during the transer period or during the 10 min exposure below.  Response fine for suffix 8 of size 1 to see 1	temperature								eat
between the lower and upper response time limits: the appropriate point heat detector category in Tab above.  Response times from 25 °C					_			роше	
the appropriate point heat detector category in Table above.  Response times from 25 °C	Response times from	4.3.3	1	The response	times of the	point h	neat detec	tor lie	
Response times from 25 °C	typical application			between the	lower and upp	per res	sponse tim	e limits for	
Response times from 25 °C 4.3.4  Response times from high ambient temperature  4.3.5  Response times from high ambient temperature  8. No alarm or fault signal was given at high ambient temperatures. A1  1 3 K min <sup>-1</sup> , Lower limit, 1 min 20 s and upper limit 2 m 20  A2, B, C  3 K min <sup>-1</sup> , Lower limit, 12 s and upper limit 2 m 20  A2, B, C  3 K min <sup>-1</sup> , Lower limit, 12 s and upper limit 3 m 13  Response delay (response time):  Additional test for suffix S point heat detectors  4.4.1  Suffix S point heat detector did not exceed the lower limits of response time during the transer period or during the 10 min exposure below.  Point heat detector category  A15 5 ±2 50 ±2  Rate of rise of air temperature "C category  A15 5 ±2 50 ±2  Rate of rise of air Lower Limit response temperature Y C and you will be a specified in 2 2 54  A20 1 2 2 54  A21 2 5 5 5 5 48  A22 1 2 50 ±2  Additional test for suffix R point heat detectors  A1.1  The response time at 20 K min <sup>-1</sup> exceeds 1 min 0 s.  No alarm or fault signal was given at high ambient temperatures appropriate to the anticipated service temperature in 13 s.  A1 1 3 K min <sup>-1</sup> , Lower limit, 1 min 20 s and upper limit 12 m 20  A2, B, C 3 K min <sup>-1</sup> , Lower limit, 1 min 20 s and upper limit 12 m 20 km in 13 s.  Suffix S point heat detector did not exceed the lower limits specified in Table 2 above, for high rates of rise of its category, in table 2 above, for high rates of rise of temperature from an initial temperature below the typical application in the proposed in the proposed in	temperature			the appropria	ite point heat	detect	tor catego	ry in Table 2	2
Response times from high ambient temperature    Response times from high ambient temperature   A.3.5				above.					
Response times from high ambient temperature  4.3.5  No alarm or fault signal was given at high ambient temperatures appropriate to the anticipated service temperatures.  A1  3 K min <sup>-1</sup> , Lower limit, 1 min 20 s and upper limit 12 s.  20 K min <sup>-1</sup> , Lower limit, 12 s and upper limit 2 m 20  A2, B, C  3 K min <sup>-1</sup> , Lower limit, 1 min 20 s and upper limit 3 m 13  The response times of the point heat detectors lie between the lower ad upper response time limits specified in Table 2 above.  Response delay (response time):  Additional test for suffix 5 point heat detector did not exceed the lower limits of response time during the transer period or during the 10 min exposure below.  Point heat detector did not exceed the lower and upper limit 3 m 13  From the conditioning detector during the transer period or during the 10 min exposure below.  Point heat Conditioning Airflow Temperature "C ategory Temperature "C ategory Temperature "C ategory Temperature K min <sup>-1</sup> Lower Limit response temperature Form and the state of rise of air temperature Form and the state of rise of temperature form and the state of rise of rise of temperature form and rise for state of rise of temperature form and intital temperature below the typical application in the temperature below the typical application in intital temperature below the typical application in the temperature form and the temperature form an			_						
Response times from high ambient temperature  A.3.5  Reproducibility  A.3.6  Reproducibility  A.3.6  Response delay (response time):  Additional test for suffix S point heat detectors  A.4.1  Additional test for suffix R point heat detectors  A.5.2  Additional test for suffix R point heat detectors  Additional test for suffix R point heat detector did not exceed the lower limits of response time during the transer period or during the 10 min exposure below.  At S 5 ± 2 50 ± 2  AZS 5 ± 50 ± 2  AZS 5 ± 50 ± 2  Additional test for suffix R point heat detector maintains the response requirements of its category, in table 2 above, for high rates of rise of temperature from ar initial temperature below the typical application	Response times from 25 °C	4.3.4							the
temperatures appropriate to the anticipated service temepratures.  A1  3 K min-1, Lower limit, 1 min 20 s and upper limit 12 s.  20 K min-1, Lower limit, 1 min 20 s and upper limit 2 m 20  A2, B, C  3 K min-1, Lower limit, 1 min 20 s and upper limit 2 m 20  A2, B, C  3 K min-1, Lower limit, 1 min 20 s and upper limit 3 m 13  The response times of the point heat detectors lie between the lower ad upper response time limits specified in Table 2 above.  Suffix S point heat detector did not exceed the lowe limits of response time during the transer period or during the 10 min exposure below.  Point heat detector  A15  5 ±2  A25  5 ±2  50 ±2  Rate of rise of air temperature "C category  A15  5 ±2  50 ±2  Rate of rise of air temperature K min-1  Min  S  3 9 40  5 5 48  10 2 54  20 1 1 27  30 58  Suffix R, the point heat detector maintains the response requirements of its category, in table 2 above, for high rates of rise of temperature from ar initial temperature below the typical application				response time	e at 20 K min	• excee	eds 1 min	0 s.	
temperatures appropriate to the anticipated service temepratures.  A1  3 K min-1, Lower limit, 1 min 20 s and upper limit 12 s.  20 K min-1, Lower limit, 1 min 20 s and upper limit 2 m 20  A2, B, C  3 K min-1, Lower limit, 1 min 20 s and upper limit 2 m 20  A2, B, C  3 K min-1, Lower limit, 1 min 20 s and upper limit 3 m 13  The response times of the point heat detectors lie between the lower ad upper response time limits specified in Table 2 above.  Suffix S point heat detector did not exceed the lowe limits of response time during the transer period or during the 10 min exposure below.  Point heat detector  A15  5 ±2  A25  5 ±2  50 ±2  Rate of rise of air temperature "C category  A15  5 ±2  50 ±2  Rate of rise of air temperature K min-1  Min  S  3 9 40  5 5 48  10 2 54  20 1 1 27  30 58  Suffix R, the point heat detector maintains the response requirements of its category, in table 2 above, for high rates of rise of temperature from ar initial temperature below the typical application	Posnonso timos from high	125	+	No alarm or f	ault signal wa	c givor	a at high a	mbiont	-
temepratures.  A1  3 K min <sup>-1</sup> , Lower limit, 1 min 20 s and upper limit 12 s.  20 K min <sup>-1</sup> , Lower limit, 12 s and upper limit 2 m 20  A2, B, C  3 K min <sup>-1</sup> , Lower limit, 12 s and upper limit 2 m 20  A2, B, C  3 K min <sup>-1</sup> , Lower limit, 12 s and upper limit 3 m 13  The response times of the point heat detectors lie between the lower ad upper response time limits specified in Table 2 above.  Response delay (response time):  Additional test for suffix S  point heat detectors  4.4.1  Suffix S point heat detector did not exceed the lower limits of response time during the transer period or during the 10 min exposure below.  Point heat detector Temperature °C  category  A1S  5 ±2  A2S  5 ±2  50 ±2  Rate of rise of air temperature °C  temperature K min <sup>-1</sup> Min  S  3 9 40  5 5 48  10 2 54  20 1 27  30 5 5 48  10 2 54  20 1 57  30 5 5 48  10 2 54  20 1 57  30 5 5 48  10 5 5 5 48  10 5 5 5 48  10 5 5 5 48  10 5 5 5 5 5 5  20 12  Additional test for suffix R  point heat detector maintains the response requirements of its category, in table 2 above, for high rates of rise of temperature from an initial temperature blow the typical application		4.5.5							
A1 3 K min-1, Lower limit, 1 min 20 s and upper limit 13 s. 20 K min-1, Lower limit, 12 s and upper limit 2 m 20 A2, B, C 3 K min-1, Lower limit, 1 min 20 s and upper limit 16 20 K min-1, Lower limit, 1 min 20 s and upper limit 16 20 K min-1, Lower limit, 12 s and upper limit 3 m 13  The response times of the point heat detectors lie between the lower ad upper response time limits specified in Table 2 above.  Response delay (response time):  Additional test for suffix S point heat detector did not exceed the low limits of response time during the transer period or during the 10 min exposure below.  Point heat detector	difficile temperature				11 1	to the	unticipate	a service	
Reproducibility  4.3.6  Reproducibility  4.3.6  Response delay (response time):  Additional test for suffix S point heat detectors  At S point heat detectors  Suffix S point heat detectors  Suffix S point heat detector did not exceed the lowe limits of response time during the transer period or during the 10 min exposure below.  Point heat detector Temperature °C Temperature °C ategory  A1S 5 ± 2 50 ± 2  A2S 5 ± 30 ± 2  A2S 5 ± 30 ± 30 ± 30 ± 30 ± 30 ± 30 ± 30 ±				•					
A2, B, C  3 K min <sup>-1</sup> , Lower limit, 1 min 20 s and upper limit 16  20 K min <sup>-1</sup> , Lower limit, 12 s and upper limit 3 m 13  The response times of the point heat detectors lie between the lower ad upper response time limits specified in Table 2 above.  Response delay (response time):  Additional test for suffix S point heat detector did not exceed the lower limits of response time during the transer period or during the 10 min exposure below.  Point heat detector also between the lower ad upper response time limits of response time during the transer period or during the 10 min exposure below.  Point heat Conditioning Temperature °C category  A1S 5 ±2 50 ±2  A2S 5 ±2 50 ±2  Rate of rise of air temperature K min <sup>-1</sup> Min S  3 9 40  5 5 48  10 2 54  20 1 27  30 58  Additional test for suffix R point heat detector maintains the response requirements of its category, in table 2 above, for high rates of rise of temperature from ar initial temperature below the typical application				3 K min <sup>-1</sup> , Lov	wer limit, 1 mi	in 20 s	and uppe	r limit 13 m	40
A2, B, C  3 K min <sup>-1</sup> , Lower limit, 1 min 20 s and upper limit 16  20 K min <sup>-1</sup> , Lower limit, 12 s and upper limit 3 m 13  The response times of the point heat detectors lie between the lower ad upper response time limits specified in Table 2 above.  Response delay (response time):  Additional test for suffix S point heat detector did not exceed the lower limits of response time during the transer period or during the 10 min exposure below.  Point heat detector also between the lower ad upper response time limits of response time during the transer period or during the 10 min exposure below.  Point heat Conditioning Temperature °C category  A1S 5 ±2 50 ±2  A2S 5 ±2 50 ±2  Rate of rise of air temperature K min <sup>-1</sup> Min S  3 9 40  5 5 48  10 2 54  20 1 27  30 58  Additional test for suffix R point heat detector maintains the response requirements of its category, in table 2 above, for high rates of rise of temperature from ar initial temperature below the typical application				S.					
Reproducibility  4.3.6  Reproducibility  4.3.6  Response delay (response time):  Additional test for suffix S point heat detectors  Additional test for suffix R point heat detector did not exceed the lower additional test for suffix R point heat detector did not exceed the lower additional test for suffix R point heat detector did not exceed the lower additional test for suffix R point heat detector did not exceed the lower limits of response time during the transer period or during the 10 min exposure below.  Point heat conditioning detector detector did not exceed the lower limits of response time during the transer period or during the 10 min exposure below.  Point heat conditioning detector detector detector detector during the 10 min exposure below.  Point heat detector detector did not exceed the lower limits of response time during the transer period or during the 10 min exposure below.  Response times of its conditioning detector detector did not exceed the lower limits of response time limits specified in Table 2 above.  Point heat detector did not exceed the lower limits of response time during the transer period or during the 10 min exposure below.  Point heat detector did not exceed the lower limits of response time limits application or during the 10 min exposure detector did not exceed the lower limits specified in Table 2 above. The point heat detector did not exceed the lower limits specified in Table 2 above. The point heat detector did not exceed the lower limits specified in Table 2 above. The point heat detector did not exceed the lower limits specified in Table 2 above. The point heat detector did not exceed the lower limits specified in Table 2 above. The point heat detector did not exceed the lower limits specified in Table 2 above. The point heat detector did not exceed the lower limits specified in Table 2 above. The point heat detector				20 K min <sup>-1</sup> , Lo	ower limit, 12	s and	upper limi	t 2 m 20 s.	
Reproducibility  4.3.6  Reproducibility  4.3.6  Response delay (response time):  Additional test for suffix S point heat detectors  Additional test for suffix R point heat detector did not exceed the lower additional test for suffix R point heat detector did not exceed the lower additional test for suffix R point heat detector did not exceed the lower additional test for suffix R point heat detector did not exceed the lower limits of response time during the transer period or during the 10 min exposure below.  Point heat conditioning detector detector did not exceed the lower limits of response time during the transer period or during the 10 min exposure below.  Point heat conditioning detector detector detector detector during the 10 min exposure below.  Point heat detector detector did not exceed the lower limits of response time during the transer period or during the 10 min exposure below.  Response times of its conditioning detector detector did not exceed the lower limits of response time limits specified in Table 2 above.  Point heat detector did not exceed the lower limits of response time during the transer period or during the 10 min exposure below.  Point heat detector did not exceed the lower limits of response time limits application or during the 10 min exposure detector did not exceed the lower limits specified in Table 2 above. The point heat detector did not exceed the lower limits specified in Table 2 above. The point heat detector did not exceed the lower limits specified in Table 2 above. The point heat detector did not exceed the lower limits specified in Table 2 above. The point heat detector did not exceed the lower limits specified in Table 2 above. The point heat detector did not exceed the lower limits specified in Table 2 above. The point heat detector did not exceed the lower limits specified in Table 2 above. The point heat detector				42.5.6					
Response delay (response time):  Additional test for suffix R point heat detectors  Additional test for suffix R point heat detectors  20 K min <sup>-1</sup> , Lower limit, 12 s and upper limit 3 m 13  The response times of the point heat detectors lie between the lower ad upper response time limits specified in Table 2 above.  Suffix S point heat detector did not exceed the lowe limits of response time during the transer period or during the 10 min exposure below.  Point heat detector response time during the transer period or during the 10 min exposure below.  Point heat detector response time during the transer period or during the 10 min exposure below.  Rate of rise of air temperature 'C at a specific to the point heat detector temperature in the point heat detector specific to the point heat detector maintains the response requirements of its category, in table 2 above, for high rates of rise of temperature from ar initial temperature below the typical application					war limit 1 mi	n 20 c	مممين اممم	r linnit 16 na	
Response delay (response time):  Additional test for suffix S point heat detectors  Additional test for suffix S point heat detectors  Additional test for suffix S point heat detectors  Suffix S point heat detector did not exceed the lower imits of response time during the transer period or during the 10 min exposure below.  Point heat detector									•
Response delay (response time):  Additional test for suffix S point heat detectors  4.4.1  Suffix S point heat detector did not exceed the lowe limits of response time during the transer period or during the 10 min exposure below.  Point heat detector Temperature °C Temperatu				20 K IIIII , EC	ower mine, 12	3 and	иррег шт	t 5 III 15 3.	
Response delay (response time):  Additional test for suffix S point heat detectors  4.4.1  Suffix S point heat detector did not exceed the lowe limits of response time during the transer period or during the 10 min exposure below.  Point heat detector Temperature °C Temperatu	Reproducibility	4.3.6		The response	times of the	point h	neat detec	tors lie	
Response delay (response time):  Additional test for suffix S point heat detector did not exceed the lower limits of response time during the transer period or during the 10 min exposure below.  Point heat detector category  A1S 5 ±2 50 ±2  A2S 5 ±2 50 ±2  Rate of rise of air temperature K min <sup>-1</sup> Min S 3 9 40 5 5 5 48 10 2 55 48 10 2 55 5 48 10 2 55 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5									
Additional test for suffix S point heat detector did not exceed the lower limits of response time during the transer period or during the 10 min exposure below.    Point heat detector category				specified in Ta	able 2 above.				
Additional test for suffix S point heat detectors  4.4.1  Suffix S point heat detector did not exceed the lower limits of response time during the transer period or during the 10 min exposure below.  Point heat detector Temperature °C Temperature °C ategory  A1S 5 ±2 50 ±2  A2S 5 ±2 50 ±2  Rate of rise of air temperature K min <sup>-1</sup> Min S  3 9 40  5 5 48  10 2 54  20 1 27  30									
point heat detectors    Ilimits of response time during the transer period or during the 10 min exposure below.    Point heat detector   Conditioning   Airflow   Temperature °C     A1S   5 ±2   50 ±2     A2S   5 ±2   50 ±2     Rate of rise of air temperature K min 1			_						
during the 10 min exposure below.    Point heat detector category		4.4.1							
Point heat detector category  A1S 5 ±2 50 ±2  A2S 5 ±2 50 ±2  Rate of rise of air temperature K min-1  Min S  3 9 40  5 5 48  10 2 54  20 1 27  30 58  Additional test for suffix R point heat detectors  Additional test for suffix R point heat detectors  Suffix R, the point heat detector maintains the response requirements of its category, in table 2 above, for high rates of rise of temperature from an initial temperature below the typical application	point neat detectors					_		eriod or	
detector category  A1S				during the 10	тип схрозите	DCIO	٧.		
detector category  A1S				Point heat	Conditionin	g	Airflow		
A1S 5 ±2 50 ±2  A2S 5 ±2 50 ±2  Rate of rise of air temperature K min <sup>-1</sup> Min S 3 9 40 5 5 48 10 2 54 20 1 27 30 58  Additional test for suffix R point heat detector maintains the response requirements of its category, in table 2 above, for high rates of rise of temperature from an initial temperature below the typical application				detector			Temper	ature °C	
Rate of rise of air temperature K min <sup>-1</sup> Min S  3 9 40  5 5 48  10 2 54  20 1 27  30 58  Additional test for suffix R point heat detector maintains the response requirements of its category, in table 2 above, for high rates of rise of temperature from an initial temperature below the typical application				category					
Rate of rise of air temperature K min <sup>-1</sup> Min S  3 9 40  5 5 48  10 2 54  20 1 27  30 58  Additional test for suffix R point heat detector maintains the response requirements of its category, in table 2 above, for high rates of rise of temperature from an initial temperature below the typical application				A1S	5 ±2		50 ±2		
Rate of rise of air temperature K min <sup>-1</sup> Min S  3 9 40  5 5 48  10 2 54  20 1 27  30 58  Additional test for suffix R point heat detector maintains the response requirements of its category, in table 2 above, for high rates of rise of temperature from ar initial temperature below the typical application									
Additional test for suffix R point heat detectors  temperature K min <sup>-1</sup> Min S  3 9 40  5 5 48  10 2 54  20 1 27  30 58  Suffix R, the point heat detector maintains the response requirements of its category, in table 2 above, for high rates of rise of temperature from an initial temperature below the typical application				AZS	J ±2		JU ±2		
Additional test for suffix R point heat detectors  temperature K min <sup>-1</sup> Min S  3 9 40  5 5 48  10 2 54  20 1 27  30 58  Suffix R, the point heat detector maintains the response requirements of its category, in table 2 above, for high rates of rise of temperature from an initial temperature below the typical application				Rate of rise	of air	Low	ver Limit r	esponse tim	ne l
Additional test for suffix R point heat detectors  3 9 40 5 5 48 10 2 54 20 1 27 30 58  Suffix R, the point heat detector maintains the response requirements of its category, in table 2 above, for high rates of rise of temperature from an initial temperature below the typical application									
Additional test for suffix R point heat detectors  3 9 40 5 5 48 10 2 54 20 1 27 30 58  Suffix R, the point heat detector maintains the response requirements of its category, in table 2 above, for high rates of rise of temperature from an initial temperature below the typical application						Min	)	S	
5 5 48 10 2 54 20 1 27 30 58  Additional test for suffix R point heat detector maintains the response requirements of its category, in table 2 above, for high rates of rise of temperature from an initial temperature below the typical application				3					
Additional test for suffix R point heat detectors  Additional test for suffix R point heat detector maintains the response requirements of its category, in table 2 above, for high rates of rise of temperature from an initial temperature below the typical application									
Additional test for suffix R point heat detectors  Suffix R, the point heat detector maintains the response requirements of its category, in table 2 above, for high rates of rise of temperature from an initial temperature below the typical application						_		54	
Additional test for suffix R point heat detector maintains the response requirements of its category, in table 2 above, for high rates of rise of temperature from an initial temperature below the typical application				20		1		27	
point heat detectors  response requirements of its category, in table 2 above, for high rates of rise of temperature from ar initial temperature below the typical application									
above, for high rates of rise of temperature from an initial temperature below the typical application		4.4.2							
initial temperature below the typical application	point heat detectors								
tomporature applicable to the estagent marked on									
temperature applicable to the category marked on				temperature	applicable to	me ca	regory ma	rkeu on it.	
Point heat detector Initial conditioning				Point heat o	letector	Initia	Londition	ning	$\neg$
								-	
A1R 5 ±2									$\exists  $
				LATI		J ±Z			

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Tolerance to supply		
voltage:  Variation in supply parameters	4.5	The point heat detector does not unduly depent on variation in the supply parameters and lie between the lower and upper response time limits specified in Table 2 above.
Durability of nominal activation conditions/Sensitivity:		
temperature resistance		
Cold (operational)	4.6.1.1	No alarm or fault signal was given during the transition to the conditioning temperature or during the period at the condition temperature  For resettable point heat detector Response time at 3 K min <sup>-1</sup> was not less than 7 min 13 s and did not exceed 2 min 40 s compared with the time obtained in 4.3.6.  A1: 20 K min <sup>-1</sup> was not less than 30 s and did not exceed 30 s compared with the time obtained in 4.3.6  A2, B, C: 20 K min <sup>-1</sup> was not less than 1 min and did not
		exceed 30 s compared with the time obtained in 4.3.6
Dry heat (endurance)	4.6.1.2	No fault signal was given on reconnection attributable to the endurance conditioning
		Point heat detector Conditioning Category Temperature °C
		C 80 ±2
		Response time at 3 K min <sup>-1</sup> was not less than 7 min 13 s and did not exceed 2 min 40 s compared with the time obtained in 4.3.6.
		A1: 20 K min <sup>-1</sup> was not less than 30 s and did not exceed 30 s compared with the time obtained in 4.3.6  A2, B, C: 20 K min <sup>-1</sup> was not less than 1 min and did not exceed 30 s compared with the time obtained in 4.3.6
Humidity resistance		
Damp heat, cyclic (operational)	4.6.2.1	No alarm or fault signal was given during the conditioning.
		Lower temperature: (25±3) °C Upper temperature: (40±2) °C
		Relative humidity: At lower temperature :≥ 95 % At upper temperature : (93 ±3) %
		Response time at 3 K min <sup>-1</sup> was not less than 7 min 13 s and did not exceed 2 min 40 s compared with the time obtained in 4.3.6.
		A1: 20 K min <sup>-1</sup> was not less than 30 s and did not exceed 30 s compared with the time obtained in 4.3.6

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П		
		A2, B, C: 20 K min <sup>-1</sup> was not less than 1 min and did not
		exceed 30 s compared with the time obtained in 4.3.6
Damp heat, steady-state	4.6.2.2	No fault signal was given on reconnection attributable to
(endurance)		the endurance conditioning.
		Conditioning
		Temperature : 40 ±2 °C
		Relative Humidity: 93 ±3 %
		Duration: 21 days
		Response time at 3 K min <sup>-1</sup> was not less than 7 min 13 s
		and did not exceed 2 min 40 s compared with the time
		obtained in 4.3.6.
		A1: 20 K min <sup>-1</sup> was not less than 30 s and did not exceed
		30 s compared with the time obtained in 4.3.6
		A2, B, C: 20 K min <sup>-1</sup> was not less than 1 min and did not
		exceed 30 s compared with the time obtained in 4.3.6
Corrosion resistance		
	4.6.3	No fault signal was given an reconnection attributable to
Sulphur dioxide (SO <sub>2</sub> )	4.0.3	No fault signal was given on reconnection attributable to
corrosion (endurance)		the endurance conditioning.
		Conditioning
		Temperature: 25 ±2 °C
		Relative Humidity: 93 ±3 %
		SO2 concentration: 25 ±5 ppm (by volume)
		Duration: 21 days
		Duration . 21 days
		Response time at 3 K min <sup>-1</sup> was not less than 7 min 13 s
		and did not exceed 2 min 40 s compared with the time
		obtained in 4.3.6.
		A1: 20 K min <sup>-1</sup> was not less than 30 s and did not exceed
		30 s compared with the time obtained in 4.3.6
		A2, B, C: 20 K min <sup>-1</sup> was not less than 1 min and did not
		exceed 30 s compared with the time obtained in 4.3.6
		exceed 50 \$ compared with the time obtained in 4.5.6
\		
Vibration resistance		
Shock (operational)	4.6.4.1	No alarm or fault signal was given during the
		conditioning period or an additional 2 min.
		For specimen with a mass ≤ 4,75 kg:
		,,,,,,,,
		Shock pulse type: Half sine
		Shock pulse type: Half sine
		Pulse duration: 6 ms
		Peak acceleration: 10X (100-20M) ms-2 (M is specimen
		mass in Kg)
		Number of directions: 6
		Pulses per direction: 3
		Response time at 3 K min <sup>-1</sup> was not less than 7 min 13 s
		and did not exceed 2 min 40 s compared with the time
		obtained in 4.3.6.
		A1: 20 K min <sup>-1</sup> was not less than 30 s and did not exceed
		30 s compared with the time obtained in 4.3.6

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		A2, B, C: 20 K min <sup>-1</sup> was not less than 1 min and did not
		exceed 30 s compared with the time obtained in 4.3.6
		check of a compared with the time obtained in 4.0.0
Impact (operational)	4.6.4.2	No alarm or fault signal was given during the conditioning period or an additional 2 min.
		Conditioning
		Conditioning: Impact energy: 1,9 ±0,1 J
		Hammer velocity: 1,5 ±0,13 ms <sup>-1</sup>
		Number of impacts: 1
		Response time at 3 K min <sup>-1</sup> was not less than 7 min 13 s
		and did not exceed 2 min 40 s compared with the time obtained in 4.3.6.
		A1: 20 K min <sup>-1</sup> was not less than 30 s and did not exceed 30 s compared with the time obtained in 4.3.6
		A2, B, C: 20 K min <sup>-1</sup> was not less than 1 min and did not exceed 30 s compared with the time obtained in 4.3.6
Vibration, sinusoidal	4.6.4.3	No fault signal was given during the conditioning
(operational)		Conditioning: Frequency range: 10 to 150 Hz
		Acceleration amplitude: $5 \text{ ms}^{-2} (\approx 0.5 \text{ g}_n)$
		Number of axes : 3
		Sweep rate: 1 octave min <sup>-1</sup>
		Number of sweep cycles: 1 per axis
		Response time at 3 K min <sup>-1</sup> was not less than 7 min 13 s
		and did not exceed 2 min 40 s compared with the time
		obtained in 4.3.6.
		A1: 20 K min <sup>-1</sup> was not less than 30 s and did not exceed
		30 s compared with the time obtained in 4.3.6
		A2, B, C: 20 K min <sup>-1</sup> was not less than 1 min and did not exceed 30 s compared with the time obtained in 4.3.6
		exceed 30 3 compared with the time obtained in 4.5.0
Vibration, sinusoidal (endurance)	4.6.4.4	No fault signal was given on reconnection attributable to the endurance conditioning.
		Conditioning:
		Frequency range: 10 to 150 Hz
		Acceleration amplitude: 10 ms <sup>-2</sup> (≈1,0 g <sub>n</sub> )
		Number of axes : 3
		Sweep rate: 1 octave min <sup>-1</sup> Number of sweep cycles: 20 per axis
		Response time at 3 K min <sup>-1</sup> was not less than 7 min 13 s
		and did not exceed 2 min 40 s compared with the time obtained in 4.3.6.
		A1: 20 K min <sup>-1</sup> was not less than 30 s and did not exceed
		30 s compared with the time obtained in 4.3.6
		A2, B, C: 20 K min <sup>-1</sup> was not less than 1 min and did not
		exceed 30 s compared with the time obtained in 4.3.6
Electrical stability EMC	4.6.5	Compliance in EN 50130-4:2011 and No fault signal was
immunity (operational)		given during the conditioning.
	<u> </u>	

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	Response time at 3 K min <sup>-1</sup> was not less than 7 min 13 s and did not exceed 2 min 40 s compared with the time obtained in 4.3.6.
	A1: 20 K min <sup>-1</sup> was not less than 30 s and did not exceed 30 s compared with the time obtained in 4.3.6 A2, B, C: 20 K min <sup>-1</sup> was not less than 1 min and did not exceed 30 s compared with the time obtained in 4.3.6

Essential characteristics	Clauses in EN 54-7:2018	Regulatory classes	Performance
Operational reliability:			
Individual alarm indication	4.2.1		The visual indicator(s) are visible from a distance of 6 m in an ambient light intensity up to
Connection of ancillary devices	4.2.2		500 lx.  Open or short circuit failures o connection to ancillary device
			did not prevent the correct operation of the detector
Monitoring of detachable detectors	4.2.3		A fault condition is signaled when the detector is removed from the mounting base.
Manufacturer's adjustments	4.2.4		It is not possible to adjust the detector settings without the use of a special tool to access into the detector or use of a code to enabling entry into the panel programming software.
On site adjustment of response behavior	4.2.5		The mode(s) of operation are adjustable from the Control
	1	None	and Indicating Equipment by use of a loop communication protocol. Access to enable mode changes is by software control of the protocol communication.
Protection against the ingress of foreign bodies	4.2.6		The chamber is designed so that a sphere of diameter (1,3±0,05) mm cannot pass into the sensor chamber.
Response to slowly developing fires	4.2.7		The provision of "drift compensation" (e.g. to compensate for sensor drift due to the build-up of dirt in
			the detector), does not lead to a significant reduction in the detectors sensitivity to slowly developing fires.
Software controlled detectors (when provided)	4.2.8		The software documentation and the software design complies with the requirements of EN 54-7:2018
Nominal activation conditions/sensitivity:			
Repeatability	4.3.1	Threshold	Ratio of response values $m_{\text{max}}$ : $m_{\text{min}} \le 1.6$ Lower response value, $m_{\text{max}}$ : $m_{\text{min}} \ge 0.05$ dB m <sup>-1</sup>

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Directional dependence	4.3.2	Ratio of response values
<b>'</b>		m <sub>max</sub> :m <sub>min</sub> ≤ 1.6
		Lower response value,
		$m_{max}: m_{min} \ge 0.05 \text{ dB m}^{-1}$
Reproducibility	4.3.3	Ratio of response values
,		$m_{\text{max}}:\overline{m} \leq 1.33$
		Ratio of the response values
		$\overline{\mathrm{m}}$ : $\mathrm{m}_{\mathrm{min}} \leq 1.5$
		Lower response value, m <sub>min</sub> <u>&gt;</u>
		0.05 dB m <sup>-1</sup>
		0.03 dB III -
Response delay (response time):		
Air movement	4.4.1	Ratio is > 0.0625 and < 1.60
		and the point smoke detector
		did not emit a fault nor alarm
		signal during the test with
		aerosol-free air
Dazzling	4.4.2	The specimen did not emit
		neither an alarm nor a fault
		signal and Ratio of response
		thresholds m <sub>max</sub> :m <sub>min</sub> ≤ 1.6
Tolerance to supply voltage:		
	4.5	Patie of consequence
Variation in supply parameters	4.5	Ratio of response values
		$m_{\text{max}}:m_{\text{min}} < 1.6$
		Lower response value, m <sub>min</sub> ≥
		0.05 dB m <sup>-1</sup>
		0.03 ub III -
Performance parameters under fire conditions:		
Fire sensitivity	4.6	Evaluated as meeting the
,,		requirements of TF2 toTF5
- 100		requirements of 112 to 113
Durability of nominal activation		
1		
conditions/Sensitivity:		
conditions/Sensitivity:		
conditions/Sensitivity: temperature resistance	4711	The specimen did not emit
conditions/Sensitivity:	4.7.1.1	The specimen did not emit
conditions/Sensitivity: temperature resistance	4.7.1.1	neither an alarm nor a fault
conditions/Sensitivity: temperature resistance	4.7.1.1	
conditions/Sensitivity: temperature resistance	4.7.1.1	neither an alarm nor a fault signal and Ratio of response
conditions/Sensitivity: temperature resistance Cold (operational)		neither an alarm nor a fault signal and Ratio of response values $m_{max}$ : $m_{min} \le 1.6$
conditions/Sensitivity: temperature resistance	4.7.1.1	neither an alarm nor a fault signal and Ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6 The specimen did not emit
conditions/Sensitivity: temperature resistance Cold (operational)		neither an alarm nor a fault signal and Ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6 The specimen did not emit neither an alarm nor a fault
conditions/Sensitivity: temperature resistance Cold (operational)		neither an alarm nor a fault signal and Ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6 The specimen did not emit
conditions/Sensitivity: temperature resistance Cold (operational)		neither an alarm nor a fault signal and Ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6 The specimen did not emit neither an alarm nor a fault signal and Ratio of response
conditions/Sensitivity: temperature resistance Cold (operational)  Dry heat (operational)		neither an alarm nor a fault signal and Ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6 The specimen did not emit neither an alarm nor a fault
conditions/Sensitivity:  temperature resistance  Cold (operational)  Dry heat (operational)  Humidity resistance	4.7.1.2	neither an alarm nor a fault signal and Ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6  The specimen did not emit neither an alarm nor a fault signal and Ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6
conditions/Sensitivity: temperature resistance Cold (operational)  Dry heat (operational)		neither an alarm nor a fault signal and Ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6 The specimen did not emit neither an alarm nor a fault signal and Ratio of response
conditions/Sensitivity:  temperature resistance  Cold (operational)  Dry heat (operational)  Humidity resistance	4.7.1.2	neither an alarm nor a fault signal and Ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6  The specimen did not emit neither an alarm nor a fault signal and Ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6
conditions/Sensitivity:  temperature resistance  Cold (operational)  Dry heat (operational)  Humidity resistance	4.7.1.2	neither an alarm nor a fault signal and Ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6  The specimen did not emit neither an alarm nor a fault signal and Ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6  The specimen did not emit neither an alarm nor a fault
conditions/Sensitivity:  temperature resistance  Cold (operational)  Dry heat (operational)  Humidity resistance	4.7.1.2	neither an alarm nor a fault signal and Ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6  The specimen did not emit neither an alarm nor a fault signal and Ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6  The specimen did not emit neither an alarm nor a fault signal and ratio of response
conditions/Sensitivity:  temperature resistance  Cold (operational)  Dry heat (operational)  Humidity resistance	4.7.1.2	neither an alarm nor a fault signal and Ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6  The specimen did not emit neither an alarm nor a fault signal and Ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6  The specimen did not emit neither an alarm nor a fault signal and ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6
conditions/Sensitivity:  temperature resistance  Cold (operational)  Dry heat (operational)  Humidity resistance	4.7.1.2	neither an alarm nor a fault signal and Ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6  The specimen did not emit neither an alarm nor a fault signal and Ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6  The specimen did not emit neither an alarm nor a fault signal and ratio of response
conditions/Sensitivity:  temperature resistance  Cold (operational)  Dry heat (operational)  Humidity resistance  Damp heat, steady-state (operational)	4.7.1.2	neither an alarm nor a fault signal and Ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6  The specimen did not emit neither an alarm nor a fault signal and Ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6  The specimen did not emit neither an alarm nor a fault signal and ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6  No fault signal, attributable to
conditions/Sensitivity:  temperature resistance  Cold (operational)  Dry heat (operational)  Humidity resistance  Damp heat, steady-state (operational)	4.7.1.2	neither an alarm nor a fault signal and Ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6  The specimen did not emit neither an alarm nor a fault signal and Ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6  The specimen did not emit neither an alarm nor a fault signal and ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6  No fault signal, attributable to the endurance conditioning
conditions/Sensitivity:  temperature resistance  Cold (operational)  Dry heat (operational)  Humidity resistance  Damp heat, steady-state (operational)	4.7.1.2	neither an alarm nor a fault signal and Ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6  The specimen did not emit neither an alarm nor a fault signal and Ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6  The specimen did not emit neither an alarm nor a fault signal and ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6  No fault signal, attributable to the endurance conditioning was given on reconnection of
conditions/Sensitivity:  temperature resistance  Cold (operational)  Dry heat (operational)  Humidity resistance  Damp heat, steady-state (operational)	4.7.1.2	neither an alarm nor a fault signal and Ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6  The specimen did not emit neither an alarm nor a fault signal and Ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6  The specimen did not emit neither an alarm nor a fault signal and ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6  No fault signal, attributable to the endurance conditioning
conditions/Sensitivity:  temperature resistance  Cold (operational)  Dry heat (operational)  Humidity resistance  Damp heat, steady-state (operational)	4.7.1.2	neither an alarm nor a fault signal and Ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6  The specimen did not emit neither an alarm nor a fault signal and Ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6  The specimen did not emit neither an alarm nor a fault signal and ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6  No fault signal, attributable to the endurance conditioning was given on reconnection of the specimen and Ratio of
conditions/Sensitivity:  temperature resistance  Cold (operational)  Dry heat (operational)  Humidity resistance  Damp heat, steady-state (operational)	4.7.1.2	neither an alarm nor a fault signal and Ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6  The specimen did not emit neither an alarm nor a fault signal and Ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6  The specimen did not emit neither an alarm nor a fault signal and ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6  No fault signal, attributable to the endurance conditioning was given on reconnection of the specimen and Ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤
conditions/Sensitivity:  temperature resistance  Cold (operational)  Dry heat (operational)  Humidity resistance  Damp heat, steady-state (operational)  Damp heat, steady-state (endurance)	4.7.1.2	neither an alarm nor a fault signal and Ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6  The specimen did not emit neither an alarm nor a fault signal and Ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6  The specimen did not emit neither an alarm nor a fault signal and ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6  No fault signal, attributable to the endurance conditioning was given on reconnection of the specimen and Ratio of
conditions/Sensitivity:  temperature resistance  Cold (operational)  Dry heat (operational)  Humidity resistance  Damp heat, steady-state (operational)  Damp heat, steady-state (endurance)	4.7.2.1	neither an alarm nor a fault signal and Ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6  The specimen did not emit neither an alarm nor a fault signal and Ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6  The specimen did not emit neither an alarm nor a fault signal and ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6  No fault signal, attributable to the endurance conditioning was given on reconnection of the specimen and Ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6
conditions/Sensitivity:  temperature resistance  Cold (operational)  Dry heat (operational)  Humidity resistance  Damp heat, steady-state (operational)  Damp heat, steady-state (endurance)	4.7.1.2	neither an alarm nor a fault signal and Ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6  The specimen did not emit neither an alarm nor a fault signal and Ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6  The specimen did not emit neither an alarm nor a fault signal and ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6  No fault signal, attributable to the endurance conditioning was given on reconnection of the specimen and Ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤
conditions/Sensitivity:  temperature resistance  Cold (operational)  Dry heat (operational)  Humidity resistance  Damp heat, steady-state (operational)  Damp heat, steady-state (endurance)  Corrosion resistance	4.7.2.1	neither an alarm nor a fault signal and Ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6  The specimen did not emit neither an alarm nor a fault signal and Ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6  The specimen did not emit neither an alarm nor a fault signal and ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6  No fault signal, attributable to the endurance conditioning was given on reconnection of the specimen and Ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6  No fault signal, attributable to
conditions/Sensitivity:  temperature resistance  Cold (operational)  Dry heat (operational)  Humidity resistance  Damp heat, steady-state (operational)  Damp heat, steady-state (endurance)  Corrosion resistance	4.7.2.1	neither an alarm nor a fault signal and Ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6  The specimen did not emit neither an alarm nor a fault signal and Ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6  The specimen did not emit neither an alarm nor a fault signal and ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6  No fault signal, attributable to the endurance conditioning was given on reconnection of the specimen and Ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6  No fault signal, attributable to the endurance conditioning
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conditions/Sensitivity:  temperature resistance  Cold (operational)  Dry heat (operational)  Humidity resistance  Damp heat, steady-state (operational)  Damp heat, steady-state (endurance)	4.7.2.1	neither an alarm nor a fault signal and Ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6  The specimen did not emit neither an alarm nor a fault signal and Ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6  The specimen did not emit neither an alarm nor a fault signal and ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6  No fault signal, attributable to the endurance conditioning was given on reconnection of the specimen and Ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6  No fault signal, attributable to the endurance conditioning
conditions/Sensitivity:  temperature resistance  Cold (operational)  Dry heat (operational)  Humidity resistance  Damp heat, steady-state (operational)  Damp heat, steady-state (endurance)	4.7.2.1	neither an alarm nor a fault signal and Ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6  The specimen did not emit neither an alarm nor a fault signal and Ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6  The specimen did not emit neither an alarm nor a fault signal and ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6  No fault signal, attributable to the endurance conditioning was given on reconnection of the specimen and Ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6  No fault signal, attributable to the endurance conditioning was given on reconnection of the endurance conditioning was given on reconnection of the specimen and Ratio of
conditions/Sensitivity:  temperature resistance  Cold (operational)  Dry heat (operational)  Humidity resistance  Damp heat, steady-state (operational)  Damp heat, steady-state (endurance)  Corrosion resistance	4.7.2.1	neither an alarm nor a fault signal and Ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6  The specimen did not emit neither an alarm nor a fault signal and Ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6  The specimen did not emit neither an alarm nor a fault signal and ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6  No fault signal, attributable to the endurance conditioning was given on reconnection of the specimen and Ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6  No fault signal, attributable to the endurance conditioning was given on reconnection of the specimen and Ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6
conditions/Sensitivity:  temperature resistance  Cold (operational)  Dry heat (operational)  Humidity resistance  Damp heat, steady-state (operational)  Damp heat, steady-state (endurance)  Corrosion resistance	4.7.2.1	neither an alarm nor a fault signal and Ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6  The specimen did not emit neither an alarm nor a fault signal and Ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6  The specimen did not emit neither an alarm nor a fault signal and ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6  No fault signal, attributable to the endurance conditioning was given on reconnection of the specimen and Ratio of response values m <sub>max</sub> :m <sub>min</sub> ≤ 1.6  No fault signal, attributable to the endurance conditioning was given on reconnection of the endurance conditioning was given on reconnection of the specimen and Ratio of

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Shock (operational)	4.7.4.1	No fault signal given f specimen during conditioning period additional 2 min. and response values m <sub>ma</sub>	the or the Ratio of
		1.6	
Impact (operational)	4.7.4.2	No fault signal given f specimen during conditioning period additional 2 min. and response values m <sub>ma</sub>	the or the Ratio of
Vibration, sinusoidal (operational)	4.7.4.3	No fault signal given f specimen during conditioning and R response values m <sub>ma</sub> 1.6	the atio of
Vibration, sinusoidal (endurance)	4.7.4.4	No fault signal, attribu the endurance condi was given on reconne the specimen and R response values m <sub>mas</sub> 1.6	itioning ection of atio of
Electrical stability EMC immunity (operational)	4.7.5	No alarm or fault sign	_
a) Electrostatic discharge (operational)		during the condition  Ratio of response v  m <sub>max</sub> :m <sub>min</sub> ≤ 1.	/alues
b) Radiated electromagnetic fields (operational)		IIImax.IIImin S 1.	
c) Conducted disturbances(operational)			
d) Fast transient bursts (operational)			
e) Slow high energy voltage surge (operational)			

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Essential characteristics	Clauses in EN 5	4-23:2010	Level(s) or class(es)	Notes
Operational reliability:				
Duration of operation	4.2.1			Pass
Provision for external conductors	4.2.2			Pass
Flammability of materials	4.2.3			Pass
Enclosure protection	4.2.4			Pass
Access	4.2.5			Pass
Manufacturer's adjustments	4.2.6			Pass
On-site adjustment of behaviour	4.2.7			Pass
Requirements for software controlled devices	4.2.8			Pass
Performance parameters under fire condition:				
Coverage volume	4.3.1			Pass
Variation of light output	4.3.2			Pass
Minimum and maximum light intensity	4.3.3			Pass
Light colour	4.3.4			Red/White
Light temporal pattern and frequency of flashing	4.3.5			Pass/0,5 Hz
Marking and data	4.3.6			Pass
Synchronization (option with requirements)	4.3.7			Pass
Durability:			None	
Temperature resistance:				
Dry heat (operational)	4.4.1.1	L		Pass
Dry heat (endurance)	4.4.1.2	2		Pass
Cold (operational)	4.4.1.3	3		Pass
Humidity resistance:				
Damp heat, cyclic (operational)	4.4.2.1	L		Pass
Damp heat, steady state (endurance)	4.4.2.2	2		Pass
Damp heat, cyclic (endurance)	4.4.2.3	3		N/A
Shock and vibration resistance:				
Shock (operational)	4.4.3.1	L		Pass
Impact (operational)	4.4.3.2	2		Pass
Vibration (operational)	4.4.3.3	3		Pass
Vibration (endurance)	4.4.3.4	1		Pass
Corrosion resistance:				
SO2 corrosion (endurance)	4.4.4			Pass
Electrical stability:				
EMC, immunity (operational)	4.4.5			Pass

NPD for CEA 4021: July 2003





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#### Annex 2

### TEST DOCUMENTATION

Accredited Laboratory	Report no.		Date
Intertek	103874656LHD-002a		2019-11-25
Intertek	103874656LHD-002b	103874656LHD-002b	
Intertek	103874656LHD-021		2020-03-20
Intertek	103874656LHD-022		2020-03-20
Intertek	103874656LHD-024		2020-03-20
Intertek	103874656LHD-030		2020-05-06
Intertek	103963397LHD-021		2020-11-20
Intertek	103963397LHD-022		2020-11-20

### **TECHNICAL BASIS**

File Number		Title
BoM V-430-S-VADR CD AutroGuard	Bill of Materials Report	



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