Certificate No.: 2531-CPR-CSP11303

CERTIFICATE OF CONSTANCY OF PERFORMANCE

Issued by DBI Certification, notified body No. 2531.

In compliance with *Regulation 305/2011/EU of the European Parliament and of the Council of 9 March 2011* (the Construction Products Regulation or CPR), this certificate applies to the construction product

Heat Detector - Point detector AUTRONICA BDH-300 with integrated short-circuit isolator

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 54-5:2017/A1:2018	:	**Fire detection and fire alarm systems - Part 5: Heat detectors - point heat detectors**
EN 54-17:2005	:	**Fire detection and fire alarm systems - Part 17: Short-circuit isolators**

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 2022-08-09 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product, the AVCP methods nor the manufacturing conditions in the plant are modified significantly, unless suspended or withdrawn by the notified product certification body.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: **2022-08-09**.

Merete Poulsen
Responsible for evaluation

Steen Nilsson
Responsible for certification decision

DANAK
Prod. Reg. Nr. 7023

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Annex 1

EXTENT

Model Reference:
Heat Detector - Point detector AUTRONICA BDH-300 with integrated short-circuit isolator

Kit BD-xxx = BDH-xxx and BWA-100

Variants:

Heat detector		
Brand	**Type**	**Class**
Autronica	BDH-200	A1, A2, A1R, A2S, B, C
Autronica	BDH-200M	A1, A2, A1R, A2S, B, C
Autronica	BDH-500	A1, A2, A1R, A2S, B, C
Autronica	BDH-500/N	A1, A2, A1R, A2S, B, C
Autronica	BDH-500/EX	A1, A2, A1R, A2S, B, C
Detector and Base		
Autronica	BD-501	A1, A2, A1R, A2S, B, C
Autronica	BD-501/N	A1, A2, A1R, A2S, B, C
Autronica	BD-501/EX	A1, A2, A1R, A2S, B, C

Base:
BWA-100 (Conventional)

Operating Voltage:
10 to 27 V DC

Heat Response Catergory:

Table 1

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
A2	25	50	54	70
B	40	65	69	85
C	55	80	84	100

Table 2- Response time limits

Rate of rise of air temperature K min-1	Cat A1			
	Lower limit		Uper 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 air temperature K min-1	Cat A2, B, C			
	Lower 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

Performance

Essential characteristics	Clauses in EN 54-5:2017/ A1:2018	Regulatory classes	Performance
Operational reliability:		A1, A1R, A2, A2S, B,C	
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, A2, 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		A fault condition is signaled when the detector is removed from the mounting base.
Manufacturer's adjustments	4.2.5		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		N/A
Software controlled detectors	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.
Static response temperature	4.3.2		The response temperatures of the point heat detectors lie between the minimum and maximum static response temperatures, according to the category of the point heat detector in Table 1 above.

Response times from typical application temperature	4.3.3		The response times of the point heat detector lie between the lower and upper response time limits for the appropriate point heat detector category in Table 2 above.
Response times from 25 °C	4.3.4		The response time at 3 K min^{-1} exceeds 7 min 13 s and the response time at 20 K min^{-1} exceeds 1 min 0 s.
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 temepratures. A1 3 K min^{-1}, Lower limit, 1 min 20 s and upper limit 13 m 40 s. 20 K min^{-1}, Lower limit, 12 s and upper limit 2 m 20 s. A2, B, C 3 K min^{-1}, Lower limit, 1 min 20 s and upper limit 16 m. 20 K min^{-1}, Lower limit, 12 s and upper limit 3 m 13 s.
Reproducibility	4.3.6		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.
Additional test for suffix R point heat detectors	4.4.2		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 temperature applicable to the category marked on it.
Tolerance to supply voltage:			

Point heat detector category	Conditioning Temperature °C	Airflow Temperature °C
A2S	5 ±2	50 ±2

Rate of rise of air temperature K min^{-1}	Lower Limit response time	
	Min	S
3	9	40
5	5	48
10	2	54
20	1	27
30		58

Point heat detector category	Initial conditioning temperature °C
A1R	5 ±2

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 Response time at 3 K min^{-1} 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^{-1} 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^{-1} 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 category: C; Conditioning Temperature °C: 80 ±2 Response time at 3 K min^{-1} 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^{-1} 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^{-1} 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^{-1} 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^{-1} 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^{-1} 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 (endurance)	4.6.2.2		No fault signal was given on reconnection attributable to the endurance conditioning. Conditioning Temperature : 40 ±2 °C Relative Humidity: 93 ±3 % Duration : 21 days Response time at 3 K min^{-1} 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^{-1} 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^{-1} was not less than 1 min and did not exceed 30 s compared with the time obtained in 4.3.6
Corrosion resistance			
Sulphur dioxide (SO_2) corrosion (endurance)	4.6.3		No fault signal was given on reconnection attributable to the endurance conditioning. Conditioning Temperature : 25 ±2 °C Relative Humidity: 93 ±3 % SO2 concentration: 25 ±5 ppm (by volume) Duration : 21 days Response time at 3 K min^{-1} 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^{-1} 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^{-1} was not less than 1 min and did not exceed 30 s compared with the time obtained in 4.3.6
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 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^{-1} 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^{-1} 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^{-1} was not less than 1 min and did not exceed 30 s compared with the time obtained in 4.3.6

Impact (operational)	4.6.4.2		No alarm or fault signal was given during the conditioning period or an additional 2 min. Conditioning: Impact energy: 1,9 ±0,1 J Hammer velocity: 1,5 ±0,13 ms^{-1} Number of impacts: 1 Response time at 3 K min^{-1} 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^{-1} 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^{-1} was not less than 1 min and did not exceed 30 s compared with the time obtained in 4.3.6
Vibration, sinusoidal (operational)	4.6.4.3		No fault signal was given during the conditioning Conditioning: Frequency range: 10 to 150 Hz Acceleration amplitude: 5 ms^{-2}(≈0,5 g_n) Number of axes : 3 Sweep rate: 1 octave min^{-1} Number of sweep cycles: 1 per axis Response time at 3 K min^{-1} 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^{-1} 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^{-1} was not less than 1 min and did not exceed 30 s compared with the time obtained in 4.3.6
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^{-2}(≈1,0 g_n) Number of axes : 3 Sweep rate: 1 octave min^{-1} Number of sweep cycles: 20 per axis Response time at 3 K min^{-1} 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^{-1} 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^{-1} was not less than 1 min and did not exceed 30 s compared with the time obtained in 4.3.6
Electrical stability EMC immunity (operational)	4.6.5		Compliance in EN 50130-4:2011 and No fault signal was given during the conditioning.

			Response time at 3 K min^{-1} 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^{-1} 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^{-1} 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 54-17:2005	Performance
Performance under fire conditions	5.2[1)]	Pass
Operational reliability	4	Pass
Durability of operational reliability; temperature resistance	5.4, 5.5	Pass
Durability of operational reliability; vibration resistance	5.9 to 5.12	Pass
Durability of operational reliability; humidity resistance	5.6, 5.7	Pass
Durability of operational reliability; corrosion resistance	5.8	Pass
Durability of operational reliability; electrical stability	5.3, 5.13	Pass
1) This is assuming that the effect of the fire is to cause a short circuit in the transmission path that is protected by these devices		

Annex 2

TEST DOCUMENTATION

Accredited Laboratory	Report no.	Date
DNV	99-1491 Revision: 02	1999-12-03, Rev. 02: 2000-01-04
DNV	2000-1178 Revision: 02	2000-02-15, Rev. 02: 2000-03-13
ANPI	BFS/DE/1057	2007-06-29
ANPI	BFS/REDI/155	2005-06-16 Addendum nr. 1: 2008-06-20 Addendum nr. 2: 2008-06-27
ANPI	BFS/REDI/234	2009-01-28
NEMKO	E18217.00	2018-11-15

TECHNICAL BASIS

File Number	Title
BoM BDH-200	Bill of Materials Report
BoM BDH-300	Bill of Materials Report
BoM BDH-500	Bill of Materials Report
BoM BDH-500 N	Bill of Materials Report
BoM BDH-500 EX	Bill of Materials Report