Certificate No.: 2531-CPR-CSP10979

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

SA5100-400 Soteria Analogue Addressable Class P Heat Detector with 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:

Apollo Fire Detectors Ltd.,
36 Brookside Road, GB-P09 1JR Havant, Hampshire

Authorised Representative Address **Apollo Gesellschaft für Meldetechologie MbH**
Am Anger 31, 33332 Gütersloh, Germany

and produced in the manufacturing plant:

Apollo Fire Detectors Ltd.,
36 Brookside Road, GB-P09 1JR Havant, Hampshire

This certificate attests that all provisions concerning the assessment and verification of constancy of performance described in Annex ZA of the standards

EN 54-5:2017/A1:2018	:	**Fire detection and fire alarm systems - Part 5: Heat detectors - point heat detectors**
EN 54-17:2005/AC:2007	:	**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 performance of the construction product is assessed to remain constant.

The attached annexes form part of this certificate.

Date of issue: **2022-01-19**.

This certificate will remain valid as long as neither the harmonized 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product, the AVCP methods nor the manufacturing conditions in the plant are modified significantly unless suspended or withdrawn by the notified product certification body.

(This certificate supersedes the previous version of this certificate issued 2019-10-10)

This certificate was first issued 2019-10-10.

Allan Laursen
Responsible for evaluation

Merete Poulsen
Responsible for certification decision

DANAK
Prod. Reg. Nr. 7023

DBI Certification A/S
Jernholmen 12, 2650 Hvidovre
Tlf.: 36 34 90 90
E-mail: info@dbicertification.dk
www.dbicertification.dk

Annex 1

EXTENT

Type:
SA5100-400 Soteria Analogue Addressable Class P Heat Detector with Short Circuit Isolator
Class A1R, A2R, A2S, CR, CS, BR and BS Adressable Heat Detector intend for use in fire detection and fire alarm systems intalled in and around buldings. With additional test for Suffix S and Suffix R detectors.

Variant:
SA5100-400LIM Heat Detector with Short Circuit Isolator

Bases:
SA5000-200 Addressable XPERT 8 Mounting Base
45681-210 XP95 Mounting Base

Note:
Meets the requirements of EN 54-5: 2017 + A1: 2018 classes A1R, A2R, A2S, CR, CS, BR and BS

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:			
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 A1R, A1S, A2R, A2S, BR, BS, CR, CS 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	A1R, A2R, A2S, CR, CS, BR and BS	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: There are adjustable setting(s) which the manufacturer is not stating a corresponding category in accordance to this standard and are only accessible by the use of a code or special tool, and it is clearly marked on the point heat detector or in the associated data.
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.
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.

<table>
<tr><td>Response times from high ambient temperature</td><td>4.3.5</td><td></td><td>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.

All others
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.</td></tr>
<tr><td>Reproducibility</td><td>4.3.6</td><td></td><td>The response times of the point heat detectors lie between the lower ad upper response time limits specified in Table 2 above.</td></tr>
<tr><td>Response delay (response time):</td><td></td><td></td><td></td></tr>
<tr><td>Additional test for suffix S point heat detectors</td><td>4.4.1</td><td></td><td>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.

<table>
<tr><th>Point heat detector category</th><th>Conditioning Temperature °C</th><th>Airflow Temperature °C</th></tr>
<tr><td>A1S</td><td>5 ±2</td><td>50 ±2</td></tr>
<tr><td>A2S</td><td>5 ±2</td><td>50 ±2</td></tr>
<tr><td>BS</td><td>20 ±2</td><td>65 ±2</td></tr>
<tr><td>CS</td><td>35 ±2</td><td>80 ±2</td></tr>
</table>
<table>
<tr><th rowspan="2">Rate of rise of air temperature K min^{-1}</th><th colspan="2">Lower Limit response time</th></tr>
<tr><th>Min</th><th>S</th></tr>
<tr><td>3</td><td>9</td><td>40</td></tr>
<tr><td>5</td><td>5</td><td>48</td></tr>
<tr><td>10</td><td>2</td><td>54</td></tr>
<tr><td>20</td><td>1</td><td>27</td></tr>
<tr><td>30</td><td></td><td>58</td></tr>
</table></td></tr>
<tr><td>Additional test for suffix R point heat detectors</td><td>4.4.2</td><td></td><td>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.

<table>
<tr><th>Point heat detector category</th><th>Initial conditioning temperature °C</th></tr>
<tr><td>A1R</td><td>5 ±2</td></tr>
<tr><td>A2R</td><td>5 ±2</td></tr>
<tr><td>BR</td><td>20 ±2</td></tr>
<tr><td>CR</td><td>35 ±2</td></tr>
</table></td></tr>
<tr><td>Tolerance to supply voltage:</td><td></td><td></td><td></td></tr>
<tr><td>Variation in supply parameters</td><td>4.5</td><td></td><td>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.</td></tr>
</table>

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^{-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 All others: 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 For resettable point heat detector 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 All others: 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) % For resettable point heat detector 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 All others: 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 For resettable point heat detector 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 All others: 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 For resettable point heat detector 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 All others: 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 For resettable point heat detector 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 All others: 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 For resettable point heat detector 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 All others: 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 For resettable point heat detector 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 All others: 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 For resettable point heat detector 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 All others: 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. For resettable point heat detector 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 All others: 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
BRE	P101798 Issue: 1	23 October 2015
BRE	P102777-1001 Issue: 1	11 December 2015
BRE	TE 295788-SW	15 October 2014
BRE	TE295788-1	30 April 2015
BRE	TE295788-2	30 April 2015
BRE	TE-P120605-1000 Issue 1	14 December 2021

Annex 3

TECHNICAL BASIS

File Number	Title
SA5100-400	Build Standard
45681-210	Build Standard
SA5000-200	Build Standard