By Appointment to
Her Majesty The Queen
Manufacturers of Fire Detection & Alarm Products
Apollo Fire Detectors Limited
Hampshire

Construction Products Regulation:
EU (No) 305/2011

This Declaration has been drawn-up in accordance with Commission Delegated Regulation (EU) No. 574/2014 which amends Annex III of Regulation (EU) No 305/2011.

DECLARATION OF PERFORMANCE

No. E0183

1. **Unique identification code of the product-type:**

   Model number and Description:

   SA5100-400 Soteria Analogue Addressable Class P Heat Detector with Short Circuit Isolator
   SA5100-400LIM Soteria Heat Detector with Short Circuit Isolator

   Approved Accessories:

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

   Harmonised Product Type(s):

   Heat Detectors – Point Detectors
   Short Circuit Isolators

2. **Intended use/es:**

   Point detectors for use in fire detection and fire alarm systems installed in and around buildings
   Fire safety

3. **Manufacturer:**

   Apollo Fire Detectors Ltd,
   36 Brookside Road, Havant, Hampshire, PO9 1JR, United Kingdom

4. **Authorised representative:**

   Apollo Gesellschaft für Meldetechnologie mbH
   Am Anger 31
   33332 Gütersloh
   Deutschland

5. **System(s) of AVCP**

   System 1

6 **Harmonised Standard(s)**

   EN 54-5:2017/A1:2018
   EN 54-17:2005/AC:2007

   Notified Body/ies:

   DBI Certification A/S (Notified Body 2531)

Apollo Fire Detectors Limited
36 Brookside Road, Havant, Hampshire, PO9 1JR, UK
t +44 (0)23 9249 2912 f +44 (0)23 9249 2754 e sales@apollo-fire.co.uk
www.apollo-fire.co.uk

Apollo Fire Detectors Ltd. Registered in England No. 1483208
Registered Office: 36 Brookside Road, Havant, Hampshire, PO9 1JR VAT Registration No. GB 339 0553 54

7. **Declared performance**

Table 1

Detector Category (Heat Class)	Typle 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		Upper 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

Essential characteristics	Clauses in EN 54-5:2017/ A1:2018	Regulatory classes	Performance
Operational reliability:		A1R, A2R, A2S, CR, CS, BR and BS	
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. Characteristics 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 manufacturer's settings except 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		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 detector 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 temperatures. 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.

<table>
<tr><td></td><td></td><td></td><td>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 and 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 transfer period or during the 10 min exposure below.

<table>
<tr><td>Point heat detector category</td><td>Conditioning Temperature °C</td><td>Airflow Temperature °C</td></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><td rowspan="2">Rate of rise of air temperature K min^{-1}</td><td colspan="2">Lower Limit response time</td></tr>
<tr><td>Min</td><td>S</td></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><td>Point heat detector category</td><td>Initial conditioning temperature °C</td></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 depend on variation in the supply parameters and lie between the lower and upper response time limits specified in Table 2 above.</td></tr>
<tr><td>Durability of nominal activation conditions/Sensitivity:</td><td></td><td></td><td></td></tr>
<tr><td>temperature resistance</td><td></td><td></td><td></td></tr>
<tr><td>Cold (operational)</td><td>4.6.1.1</td><td></td><td>No alarm or fault signal was given during the transition to the conditioning temperature or during the period at the condition temperature

<u>For resettable point heat detector</u></td></tr>
</table>

<table>
<tr><td></td><td></td><td></td><td>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</td></tr>
<tr><td>Dry heat (endurance)</td><td>4.6.1.2</td><td></td><td>No fault signal was given on reconnection attributable to the endurance conditioning

<table><tr><td>Point heat detector category</td><td>Conditioning Temperature °C</td></tr><tr><td>C</td><td>80 ±2</td></tr></table>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</td></tr>
<tr><td>Humidity resistance</td><td></td><td></td><td></td></tr>
<tr><td>Damp heat, cyclic (operational)</td><td>4.6.2.1</td><td></td><td>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</td></tr>
<tr><td>Damp heat, steady-state (endurance)</td><td>4.6.2.2</td><td></td><td>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</td></tr>
<tr><td>Corrosion resistance</td><td></td><td></td><td></td></tr>
</table>

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	Standard EN54-17:2005	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		

8. **Online Display Location**

   This document can be viewed online at www.apollo-fire.co.uk

The performance of the product identified above is in the conformity with the set of declared performance/s. This declaration of performance is issued, in accordance with Regulation (EU) No. 305/2011, under the sole responsibility of the manufacturer identified above

Signed for and on behalf of Apollo Fire Detectors Limited by:

Mr. David Robbins
Technical Director
Havant – 12.12.2022

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