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. 2531-CPR-CSP10977

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

   Model number and Description:

   SA5000-700 Soteria Analogue Addressable Class A1R Optical Smoke/Heat Detector

   Approved Accessories:

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

   Harmonised Product Type(s):

   Heat Detectors – Point Detectors
   Smoke Detectors – Point Detectors

2. **Intended use/es:**

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

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 of AVCP**

   System 1

6a. **Harmonised Standard(s)**

   EN 54-5:2017 + A1:2018
   EN 54-7:2018

6b. **Notified Body:**

   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

Table 2 – Response time limits

Rate of rise of air temperature K min-1	Cat A1			
	Lower Limit		Upper Limit	
1	29	0	40	20
3	7	13	13	40
5	4	6	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	
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		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.
Reproducibility	4.3.6		The response times of the point heat detectors lie between the lower and upper response time limits specified in Table 2 above.
Response delay (response time):			

Additional test for suffix S point heat detectors	4.4.1		N/A
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. Point heat detector category: A1R Initial conditioning temperature °C: 5 ±2
Tolerance to supply voltage:			
Variation in supply parameters	4.5		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.
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
Dry heat (endurance)	4.6.1.2		N/A for A1R
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
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

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
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
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
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
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
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

Essential characteristics	Clauses in EN 54-7:2018	Regulatory classes	Performance
Operational reliability:		None	
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 500 lx.
Connection of ancillary devices	4.2.2		Open or short circuit failures of 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 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	4.2.8		The software documentation and the software design complies with the requirements of EN 54-7:2018.
Nominal activation conditions/sensitivity:		Threshold	
Repeatability	4.3.1		Ratio of response values $m_{max}:m_{min} \leq 1.6$ Lower response value, $m_{max}:m_{min} \geq 0.05$ dB m^{-1}
Directional dependence	4.3.2		Ratio of response values $m_{max}:m_{min} \leq 1.6$ Lower response value, $m_{max}:m_{min} \geq 0.05$ dB m^{-1}
Reproducibility	4.3.3		Ratio of response values $m_{max}:\bar{m} \leq 1.33$ Ratio of the response values $\bar{m}: m_{min} \leq 1.5$ Lower response value, $m_{min} \geq 0.05$ dB m^{-1}
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 $m_{max}:m_{min} \leq 1.6$
Tolerance to supply voltage:			
Variation in supply parameters	4.5		Ratio of response values $m_{max}:m_{min} < 1.6$ Lower response value, $m_{min} \geq 0.05$ dB m^{-1}
Performance parameters under fire conditions:			
Fire sensitivity	4.6		Evaluated as meeting the requirements of TF2 toTF5
Durability of nominal activation conditions/Sensitivity:			
temperature resistance			
Cold (operational)	4.7.1.1		The specimen did not emit neither an alarm nor a fault signal and Ratio of response values $m_{max}:m_{min} \leq 1.6$
Dry heat (operational)	4.7.1.2		The specimen did not emit neither an alarm nor a fault signal and Ratio of response values $m_{max}:m_{min} \leq 1.6$
Humidity resistance			
Damp heat, steady-state (operational)	4.7.2.1		The specimen did not emit neither an alarm nor a fault signal and ratio of response values $m_{max}:m_{min} \leq 1.6$
Damp heat, steady-state (endurance)	4.7.2.2		No fault signal, attributable to the endurance conditioning was given on reconnection of the specimen and Ratio of response values $m_{max}:m_{min} \leq 1.6$
Corrosion resistance			
Sulphur dioxide (SO_2) corrosion (endurance)	4.7.3		No fault signal, attributable to the endurance conditioning was given on reconnection of the specimen and Ratio of response values $m_{max}:m_{min} \leq 1.6$
Vibration resistance			
Shock (operational)	4.7.4.1		No fault signal given from the specimen during the conditioning period or the additional 2 min. and Ratio of response values $m_{max}:m_{min} \leq 1.6$
Impact (operational)	4.7.4.2		No fault signal given from the specimen during the conditioning period or the additional 2 min. and Ratio of response values $m_{max}:m_{min} \leq 1.6$
Vibration, sinusoidal (operational)	4.7.4.3		No fault signal given from the specimen during the conditioning and Ratio of response values $m_{max}:m_{min} \leq 1.6$
Vibration, sinusoidal (endurance)	4.7.4.4		No fault signal, attributable to the endurance conditioning was given on reconnection of the specimen and Ratio of response values $m_{max}:m_{min} \leq 1.6$

Electrical stability EMC immunity (operational) a) Electrostatic discharge (operational) b) Radiated electromagnetic fields (operational) c) Conducted disturbances(operational) d) Fast transient bursts (operational) e) Slow high energy voltage surge (operational)	4.7.5		No alarm or fault signal given during the conditioning and Ratio of response values $m_{max}:m_{min} \leq 1.6$

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 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 – 06.04.2023

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