



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. D0004

1. Unique identification code of the product-type:

Model number and Description:

RW1000-400APO – REACH Heat Detector using Radio Links

Approved Accessories:

n/a

Harmonised Product Type(s):

Heat Detectors
Components using radio links

2. Intended use/es:

Point detectors for use in fire detection and fire 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(s) of AVCP

System 1

6 Harmonised Standard(s)

EN 54-5:2017 + A1:2018
EN 54-25:2008 + AC:2012

Notified Body/ies:

IMQ ISTITUTO ITALIANO DEL MARCHIO DI QUALITÀ S.P.A. (Notified Body No. 0051)

A HALMA COMPANY



Assessed to ISO 9001:2015
Cert.LPCB ref.010



Assessed to ISO 14001:2015
Cert.LPCB ref.010 EMS



Cert.LPCB ref.010

Apollo Fire Detectors Limited

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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

Essential characteristics	Clauses in EN 54-5:2017/ A1:2018	Regulatory classes	Performance
Operational reliability:		A1R, 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 $\geq 15\text{mm}$ from the mounting surface of the point heat detector.
Individual alarm indication	4.2.2		Category A1R, BS 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		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. 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 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	<p>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.</p> <table border="1"> <thead> <tr> <th>Point heat detector category</th> <th>Conditioning Temperature °C</th> <th>Airflow Temperature °C</th> </tr> </thead> <tbody> <tr> <td>BS</td> <td>20 ±2</td> <td>65 ±2</td> </tr> </tbody> </table> <table border="1"> <thead> <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> </thead> <tbody> <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> </tbody> </table>	Point heat detector category	Conditioning Temperature °C	Airflow Temperature °C	BS	20 ±2	65 ±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	Conditioning Temperature °C	Airflow Temperature °C																										
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10	2	54																										
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30		58																										
Additional test for suffix R point heat detectors	4.4.2	<p>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.</p> <table border="1"> <thead> <tr> <th>Point heat detector category</th> <th>Initial conditioning temperature °C</th> </tr> </thead> <tbody> <tr> <td>A1R</td> <td>5 ±2</td> </tr> </tbody> </table>	Point heat detector category	Initial conditioning temperature °C	A1R	5 ±2																						
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A1R	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	<p>No alarm or fault signal was given during the transition to the conditioning temperature or during the period at the condition temperature</p> <p><u>A1R</u>: 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 <u>BS</u>: 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</p>																										
Dry heat (endurance)	4.6.1.2	<p>No fault signal was given on reconnection attributable to the endurance conditioning</p> <p><u>A1</u>: 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 <u>BS</u>: 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</p>																										
Humidity resistance																												
Damp heat, cyclic (operational)	4.6.2.1	No alarm or fault signal was given during the conditioning.																										

		<p>Lower temperature: (25±3) °C Upper temperature: (40±2) °C</p> <p>Relative humidity: At lower temperature: ≥ 95 % At upper temperature: (93 ±3) %</p> <p><u>A1R</u>: 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 <u>BS</u>: 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</p>
Damp heat, steady-state (endurance)	4.6.2.2	<p>No fault signal was given on reconnection attributable to the endurance conditioning.</p> <p>Conditioning Temperature: 40 ±2 °C Relative Humidity: 93 ±3 % Duration: 21 days</p> <p><u>A1R</u>: 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 <u>BS</u>: 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</p>
Corrosion resistance		
Sulphur dioxide (SO ₂) corrosion (endurance)	4.6.3	<p>No fault signal was given on reconnection attributable to the endurance conditioning.</p> <p>Conditioning Temperature: 25 ±2 °C Relative Humidity: 93 ±3 % SO₂ concentration: 25 ±5 ppm (by volume) Duration: 21 days</p> <p><u>A1R</u>: 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 <u>BS</u>: 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</p>
Vibration resistance		
Shock (operational)	4.6.4.1	<p>No alarm or fault signal was given during the conditioning period or an additional 2 min.</p> <p>For specimen with a mass ≤ 4,75 kg:</p> <p>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</p> <p><u>A1R</u>: 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 <u>BS</u>: 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</p>

Impact (operational)	4.6.4.2	<p>No alarm or fault signal was given during the conditioning period or an additional 2 min.</p> <p>Conditioning: Impact energy: 1,9 ±0,1 J Hammer velocity: 1,5 ±0,13 ms⁻¹ Number of impacts: 1</p> <p><u>A1R</u>: 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 <u>BS</u>: 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</p>
Vibration, sinusoidal (operational)	4.6.4.3	<p>No fault signal was given during the conditioning</p> <p>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</p> <p><u>A1R</u>: 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 <u>BS</u>: 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</p>
Vibration, sinusoidal (endurance)	4.6.4.4	<p>No fault signal was given on reconnection attributable to the endurance conditioning.</p> <p>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</p> <p><u>A1R</u>: 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 <u>BS</u>: 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</p>
Electrical stability EMC immunity (operational)	4.6.5	<p>Compliance in EN 50130-4:2011 and No fault signal was given during the conditioning.</p> <p><u>A1R</u>: 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 <u>BS</u>: 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</p>

Essential Characteristics	Standard EN54-25:2008 + AC:2012	Performance
Performance parameters under fire conditions	4.1, 4.2.2, 5.2, 8.3.7	Pass
Response delay (response time to fire)	8.2.3, 8.2.6	Pass
Operational reliability	4.2.1, 4.2.3 to 4.2.7, 5.3, 5.4, 6.7, 8.2.2, 8.2.4, 8.2.5, 8.2.7, 8.2.8b, 8.2.9, 8.3.1, 8.3.2, 8.3.3, 8.3.4, 8.3.5, 8.3.6	Pass
Durability of operational reliability: Temperature resistance	8.3.9c, 8.3.10c, 8.3.11	Pass
Durability of operational reliability: Vibration resistance	8.3.16c, 8.3.17 to 8.3.19	Pass
Durability of operational reliability: Humidity resistance	8.3.12d, 8.3.13e, 8.3.14	Pass
Durability of operational reliability: Corrosion resistance	8.3.15c	Pass
Durability of operational reliability: Electrical stability	8.3.20	Pass
<p>a The products covered by this standard are assumed to enter the alarm condition, in an event of fire, before the fire becomes so large as to affect their functioning. There is therefore no requirement to function when exposed to direct attack from fire.</p> <p>b Only applicable to components required to indicate loss of communication or to transmit this information to the CIE.</p> <p>c Not applicable for CIE</p> <p>d Not applicable for CIE and smoke detectors</p> <p>e Only applicable for CIE and smoke detectors</p>		

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 – 14.09.22

(v2)

