

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

55000-190 AlarmSense Class A1R Heat Detector
55000-193 AlarmSense Class CS Heat Detector

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
Havant, Hampshire, P09 1JR
United Kingdom

and produced in the manufacturing plant:
Apollo Fire Detectors Ltd.
36 Brookside Road
Havant, Hampshire, P09 1JR
United Kingdom

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**

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 2020-10-15 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product, the AVCP methods nor the manufacturing conditions in the plant are modified significantly, unless suspended or withdrawn by the notified product certification body.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: **2022-08-24**.

(This certificate supersedes the previous version of this certificate issued 2020-10-15)



Merete Poulsen
Responsible for evaluation



Steen Nilsson
Responsible for certification decision

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Annex 1

EXTENT

Model Reference:

55000-190 AlarmSense Class A1R Heat Detector
 55000-193 AlarmSense Class CS Heat Detector

Variant:

55000-193CSS AlarmSense Class CS Heat Detector

Description:

Class A1R/CS Heat Detector intended for use in fire detection and fire alarm systems installed in and around buildings.

Operating Voltage:

9 to 33 V DC

Heat Class:

A1R/CS

Base:

45681-244 AlarmSense Detector Standard Mounting Base

Heat Response Category:

*For detector categories with the suffix S or R, additional requirements are needed see 4.4.1 or 4.4.2

Table 1

Detector Category (Heat Class):	Typical Application Temperature	Maximum Application Temperature °C	Minimum Static Response Temperature °C	Maximum Static Response Temperature °C
55000-190 AlarmSense A1	25	50	54	65
55000-193 AlarmSense C	55	80	84	100

Table 2- Response time limits

Rate of rise of air temperature K min ⁻¹	55000-190 AlarmSense Cat A1R			
	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

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Rate of rise of air temperature K min-1	55000-193 AlarmSense Cat CS			
	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	55000-190 AlarmSense A1R 55000-193 AlarmSense CS	The heat sensitive element(s) or at least part of it, except elements with auxiliary functions (e.g.characteristic correctors), are a distance ≥ 15 mm from the mounting surface of the point heat detector.
Individual alarm indication	4.2.2		Category A1R, 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 manufacture'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		N/A
Software controlled detectors (when provided)	4.2.7		N/A
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.

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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. 55000-190 AlarmSense A1R 3 K min ⁻¹ , Lower limit, 1 min 20 s and upper limit 13m 40s 20 K min ⁻¹ , Lower limit, 12 s and upper limit 2 m 20 s. 55000-193 AlarmSense CS 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	55000-193 AlarmSense CS 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 border="1" data-bbox="847 1171 1366 1308"> <thead> <tr> <th>Point heat detector category</th> <th>Conditioning Temperature °C</th> <th>Airflow Temperature °C</th> </tr> </thead> <tbody> <tr> <td>CS</td> <td>35 ±2</td> <td>80 ±2</td> </tr> </tbody> </table> <table border="1" data-bbox="847 1337 1414 1588"> <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	CS	35 ±2	80 ±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																										
CS	35 ±2	80 ±2																										
Rate of rise of air temperature K min ⁻¹	Lower Limit response time																											
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20	1	27																										
30		58																										
Additional test for suffix R point heat detectors	4.4.2	55000-190 AlarmSense A1R 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 border="1" data-bbox="847 1823 1414 1919"> <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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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>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.</p> <p>55000-190 AlarmSense A1R 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</p> <p>55000-193 AlarmSense CS 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> <table border="1"> <thead> <tr> <th>Point heat detector category</th> <th>Conditioning Temperature °C</th> </tr> </thead> <tbody> <tr> <td>CS</td> <td>80 ±2</td> </tr> </tbody> </table> <p>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.</p> <p>55000-190 AlarmSense A1R 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</p> <p>55000-193 AlarmSense CS 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>	Point heat detector category	Conditioning Temperature °C	CS	80 ±2
Point heat detector category	Conditioning Temperature °C						
CS	80 ±2						
Humidity resistance							
Damp heat, cyclic (operational)	4.6.2.1		<p>No alarm or fault signal was given during the conditioning.</p> <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>				

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		<p>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.</p> <p>55000-190 AlarmSense A1R 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</p> <p>55000-193 AlarmSense CS 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>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.</p> <p>55000-190 AlarmSense A1R 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</p> <p>55000-193 AlarmSense CS 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>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.</p> <p>55000-190 AlarmSense A1R 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</p> <p>55000-193 AlarmSense CS 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</p>

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		<p>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>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.</p> <p>55000-190 AlarmSense A1R 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</p> <p>55000-193 AlarmSense CS 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>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.</p> <p>55000-190 AlarmSense A1R 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</p> <p>55000-193 AlarmSense CS 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>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.</p> <p>55000-190 AlarmSense A1R 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</p> <p>55000-193 AlarmSense CS 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>

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		<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>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.</p> <p>55000-190 AlarmSense A1R 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</p> <p>55000-193 AlarmSense CS 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>
<p>Electrical stability EMC immunity (operational)</p>	<p>4.6.5</p>	<p>Compliance in EN 50130-4:2011 and No fault signal was given during the conditioning.</p> <p>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.</p> <p>55000-190 AlarmSense A1R 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</p> <p>55000-193 AlarmSense CS 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>

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Annex 2

TEST DOCUMENTATION

Accredited Laboratory	Report no.	Date
UL International UK Ltd.	NC12329-D3-European Directive-Original	2012-06-01, revised 2017-02-27
BRE Global test Report	TE-P105645-1002 Issue:1	2019-03-06

TECHNICAL BASIS

File Number	Title
55000-190	Build Standard
55000-193	Build Standard

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