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

Orbis IS Class BR conventional intrinsically safe heat detector (Approval Reference* 50003) for use in fire detection and alarm systems

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, GB-P09 1JR
United Kingdom

and produced in the manufacturing plant:

Apollo Fire Detectors Ltd.
36 Brookside Road
Havant, Hampshire, GB-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 2019-10-28 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product, the AVCP methods nor the manufacturing conditions in the plant are modified significantly, unless suspended or withdrawn by the notified product certification body.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: **2022-06-30**

(This certificate supersedes the previous version of this certificate issued 2019-10-28)

Merete Poulsen
Responsible for evaluation

Steen Nilsson
Responsible for certification decision

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Annex 1

EXTENT

Model Reference:
Orbis IS Class BR conventional intrinsically safe heat detector (Approval Reference* 50003)
for use in fire detection and alarm systems

Variants:
ORB-HT-51149-APO Orbis Intrinsically safe class BR heat detector with SensAlert and FasTest
ORB-HT-51150-APO Orbis Intrinsically safe class BR heat detector with Flashing LED, SensAlert and FasTest

Bases:
Base style 'OB (+ATEX marking)' part numbers:
ORB-MB-50018-APO TimeSaver IS base

Ancillaries:
ORB-BA-50008-APO Orbis intrinsically safe adapter base (to be used in conjunction with the following base(s) only: 45681-207)

*The Apollo 'Approval Reference Number' identifies a group of detectors that all have the same physical construction, but have features enabled or disabled via their software, and/or regional marking variations.

Description:
Class BR Adressable Heat Detector intend for use in fire detection and fire alarm systems intalled in and around buldings. With additional test for Suffix R detectors.

Operating Voltage:
8.5 to 33 V DC

Heat Response Catergory:
*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
BR	40	65	69	85

Table 2- Response time limits

Rate of rise of air temperature K min-1	Cat BR			
	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 BR 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		N/A
Software controlled detectors (when provided)	4.2.7	BR	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.
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 temepratures.

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<table>
<tr><td></td><td></td><td></td><td>BR
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>N/A</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>BR</td><td>20 ±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>
<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

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.

BR: 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

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.

BR: 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.</td></tr>
</table>

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			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. BR: 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 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. BR: 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 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. BR: 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

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			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. BR: 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 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. BR: 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 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. BR: 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 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. BR: 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.

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			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. BR: 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

Annex 2

TEST DOCUMENTATION

Accredited Laboratory	**Report no.**	**Date**
BRE	TE 227758-1	2006-08-15
BRE	TE P105642-1001 Issue:1	2019-03-21
BRE	227758 SW Revision 1	2006-08-04

TECHNICAL BASIS

File Number	Title
400-HT-00011	Build Standard
ORB-MB-50018	Build Standard no. 300-MA-00011