Certificate No.: 8504-UKCA-CPR-UKCSP10150

CERTIFICATE OF CONSTANCY OF PERFORMANCE

Issued by DBI Certification-UK, approved body No. 8504.

In compliance with UK STATUTORY INSTRUMENT 2020 No. 1359 Construction Products Regulation 2011 (retained EU law EUR 305/2011) as amended by the Construction Products (Amendment etc.) (EU Exit) Regulations 2019 and the Construction Products (Amendment etc.) (EU Exit) Regulations 2020, this certificate applies to the construction product

TAU-TH-01, TAU-TH-01-BL

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:

Hyfire Wireless Fire Solutions Ltd
Unit B12a Holly Farm Business Park
Honiley, Warwickshire, CV81NP
United Kingdom

and produced in the manufacturing plant:

UKCPA10005

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**
EN 54-25:2008+AC:2012	:	**Fire detection and fire alarm systems — Part 25: Components using radio links**

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the AVCP methods nor the manufacturing conditions in the plant are modified significantly, unless suspended or withdrawn by the notified product certification body.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

Merete Poulsen
Responsible for evaluation

Steen Nilsson
Responsible for certification decision

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No. 23333

Annex 1

EXTENT

Product description:
TAU-TH-01 Heat detector using radio link
TAU-TH-01-BL Heat detector using radio link

Confirgurations:
The heat detector model TAU-TH-01 consists of a plastic enclosure (dimensions: 110 (d) x 65 (h) mm) with IP 40 degree of protection, containing:
- No. 1 Main board (PCB code B40-LB100-0004)
- No. 2 battery allocable (CR123A Lithium, 3 V – 1.25 Ah)

The heat detector model TAU-TH-01-BL is identical to the model TAU-TH-01 but with black enclosure.

Technical Characteristics:
Operating frequency band: 868 MHz ; 916 MHz
Hardware identification of the microcontroller (U4) used on the main board: STMicroelectronics, STM32L051R8
Firmware identification of the microcontroller (U4) used on the main board:
- 0_1_17 (U4), using the 868 MHz frequency band
- 0_1_18 (U4), using the 916 MHz frequency band

Heat Response Catergory:
Table 1

Detector Category (Heat Class):	Typical Application Temperature	Maximum Application Temperature °C	Minimum Static Response Temperature °C	Maximum Static Response Temperature °C
A1R	25	50	54	65
BS	40	65	69	85

Table 2- Response time limits

Rate of rise of air temperature K min-1	Cat A1			
	Lower limit		Uper 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

Rate of rise of air temperature K min-1	Cat BS			
	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:		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.characteristic correctors), are a distance ≥15mm from the mounting surface of the point heat detector.
Individual alarm indication	4.2.2		Category A1 & B 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		Settings complying with requirements af standard shall only be accessible by the use of code or special tool or by removing the detector from its base (mounting)
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 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. 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.

<table>
<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>Suffix S point heat detector did not exceed the lower limits of response time during the transer 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>BS</td><td>20 ±2</td><td>65 ±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>
</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

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
BS: 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

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
BS: 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>

			Lower temperature: (25±3) °C Upper temperature: (40±2) °C Relative humidity: At lower temperature :≥ 95 % At upper temperature : (93 ±3) % 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 BS: 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 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 BS: 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 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 BS: 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 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 BS: 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 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 BS: 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 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 BS: 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 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. 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 BS: 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	Clauses in EN 54-25:2008+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, 8.2.8, 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 and response delay; temperature resistance	8.3.9, 8.3.10, 8.3.11	Pass
Durability of operational reliability; vibration resistance	8.3.16, 8.3.17 to 8.3.19	Pass
Durability of operational reliability; humidity resistance	8.3.12, 8.3.13, 8.3.14	Pass
Durability of operational reliability; corrosion resistance	8.3.15	Pass
Durability of operational reliability; electrical stability	8.3.20	Pass

Annex 2

TEST DOCUMENTATION

Test documentation can be found in case no. UKCSP10082.

TECHNICAL BASIS

File Number	Title	Date
BOM-TWDTX-0005	TAURUS WIRELESS DETECTOR THERMAL (TW-DT-01) - 868 / 916 VARIANTS - Bill of Material	2021-11-19, Rev. C