



# IECEX Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit [www.iecex.com](http://www.iecex.com)

Certificate No.:	<b>IECEX BAS 13.0067</b>	Page 1 of 4	<u>Certificate history:</u>
Status:	<b>Current</b>	Issue No: 6	Issue 5 (2020-08-10)
Date of Issue:	2021-10-04		Issue 4 (2020-04-09)
Applicant:	<b>Rayleigh Instruments Limited</b> Raytel House Cutlers Road South Woodham Ferrers Essex CM3 5WA <b>United Kingdom</b>		Issue 3 (2018-02-23)
Equipment:	<b>ETS-05 Electronic Thermostat</b>		Issue 2 (2016-12-19)
Optional accessory:			Issue 1 (2016-02-16)
Type of Protection:	<b>Increased safety, Protection by Encapsulation, Intrinsic Safety, Dust Protection by Enclosure</b>		
Marking:	<b>Ex eb ia mb [ia Ga] IIC T5 Gb (-40°C ≤ Ta ≤ +60°C)</b> <b>Ex tb IIC T100°C Db (-40°C ≤ Ta ≤ +60°C)</b>		

Approved for issue on behalf of the IECEx  
Certification Body:

**R S Sinclair**

Position:

**Technical Manager**

Signature:  
(for printed version)

Date:

4/10/2021

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting [www.iecex.com](http://www.iecex.com) or use of this QR Code.



Certificate issued by:

**SGS Baseefa Limited**  
**Rockhead Business Park**  
**Staden Lane**  
**Buxton, Derbyshire, SK17 9RZ**  
**United Kingdom**





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Manufacturer: **Rayleigh Instruments Limited**  
Raytel House  
Cutlers Road  
South Woodham Ferrers  
Essex  
CM3 5WA  
**United Kingdom**

Additional  
manufacturing  
locations:

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended

#### STANDARDS :

The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

**IEC 60079-0:2017** Explosive atmospheres - Part 0: Equipment - General requirements  
Edition:7.0

**IEC 60079-11:2011** Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"  
Edition:6.0

**IEC 60079-18:2014** Explosive atmospheres – Part 18: Equipment protection by encapsulation "m"  
Edition:4.0

**IEC 60079-31:2013** Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"  
Edition:2

**IEC 60079-7:2017** Explosive atmospheres - Part 7: Equipment protection by increased safety "e"  
Edition:5.1

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

#### TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Reports:

[GB/BAS/ExTR12.0269/01](#)  
[GB/BAS/ExTR20.0071/00](#)

[GB/BAS/ExTR16.0372/00](#)  
[GB/BAS/ExTR20.0118/00](#)

[GB/BAS/ExTR18.0003/00](#)  
[GB/BAS/ExTR21.0171/00](#)

Quality Assessment Report:

[GB/BAS/QAR12.0003/06](#)



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## EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

The Raytel ETS-05 Electronic Thermostat provides accurate temperature control for heating cables.

It comprises a plastic box with terminals inside for connection to the sensor and to the incoming user connections. Relay contacts are present to allow resistive loads of up to 230V a.c. at 32A to be controlled.

### ETS-05-a1-bb-c

The supply range for the equipment is 99 to 121V a.c.

Supply & relay terminal block TB1  $U_m = 253V$ . Rated current = 32A.

Relay terminal block TB3 (if present)  $U_m = 253V$ .

### ETS-05-a1R-bb-c

The supply range for the equipment is 99 to 132V a.c.  $U_m = 253V$ .

Supply & relay terminal block TB1  $U_m = 253V$ . Rated current = 32A.

Relay terminal block TB3 (if present)  $U_m = 253V$ .

### ETS-05-a2-bb-c

The supply range for the equipment is 195 to 230V a.c.  $U_m = 253V$ .

Supply & relay terminal block TB1  $U_m = 253V$ . Rated current = 32A.

Relay terminal block TB3 (if present)  $U_m = 253V$ .

### ETS-05-a2R-bb-c

The supply range for the equipment is 195 to 277V a.c.  $U_m = 277V$ .

Supply & relay terminal block TB1  $U_m = 277V$ . Rated current = 32A.

Relay terminal block TB3 (if present)  $U_m = 277V$ .

### Sensor Connections - Terminal Block TB2

$$U_o = 5.88V$$

$$I_o = 29mA$$

$$P_o = 43mW$$

$$C_i = 26nF$$

$$L_i = 0$$

$$U_i = 0$$

The capacitance and either the inductance or inductance to resistance ratio (L/R) of the load connected to hazardous area terminals must not exceed the following values:

GROUP	CAPACITANCE ( $\mu F$ )	INDUCTANCE (mH)	OR ( $\mu H/ohm$ )	L/R RATIO
IIC	43	43	843	
IIB	1000	172	3373	
IIA	1000	345	6746	

The above load parameters apply where:

1. The external circuit contains no combined lumped inductance  $L_i$  and capacitance  $C_i$  greater than 1% of the above values, or
2. The inductance and capacitance are distributed as in a cable, or
3. The external circuit contains either only lumped inductance or lumped capacitance in combination with a cable.

In all other situations e.g. the external circuit contains combined lumped inductance and lumped capacitance, up to 50% of each of the L and C values is allowed.

**SPECIFIC CONDITIONS OF USE: NO**



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**DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)**  
**Variation 6.1**

This issue of the certificate permits the addition of models with alarm outputs and the introduction of a new model naming convention.

ExTR: <b>GB/BAS/ExTR21.0171/00</b>
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File Reference: <b>20/0458</b>
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