



# IECEX Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

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

Certificate No.: IECEx BAS 12.0006X Issue No: 10 Certificate history:  
Status: **Current** Page 1 of 5 Issue No. 10 (2019-02-21)  
Date of Issue: **2019-02-21** Issue No. 9 (2018-06-28)  
Applicant: **Hawke International** Issue No. 8 (2017-04-03)  
A Division of Hubbell Limited Issue No. 7 (2015-02-09)  
A Member of the Hubbell Group of Companies Issue No. 6 (2014-10-24)  
Oxford Street West Issue No. 5 (2014-09-11)  
Ashton-under-Lyne Lancashire OL7 0NA Issue No. 4 (2014-01-27)  
**United Kingdom** Issue No. 3 (2013-10-08)  
Issue No. 2 (2013-10-08)  
Issue No. 1 (2012-12-18)

Equipment: **Mark IV Range of ControlEx Connectors**  
Optional accessory:

Type of Protection: **Ex db, Ex tb**

Marking: **Ex db IIC T\* Gb/ Ex tb III C T\*\*C Db (Tamb -40° C to +\*\*°C)** The temperature classification and ambient temperature are dependent upon the power dissipation, or,  
**Ex db IIB+H<sub>2</sub> T\* Gb/ Ex tb III C T\*\*°C Db (Tamb -40°C to +\*\*°C)** when manufactured in unplated aluminum bronze. The temperature classification and ambient temperature are dependent upon the power dissipation.

Approved for issue on behalf of the IECEx  
Certification Body:

R S Sinclair

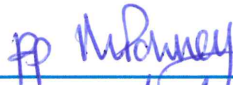
Position:

Technical Manager

Signature:  
(for printed version)

M POWNEY  
Certification  
Manager

Date:

  
25/2/19

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 the [Official IECEx Website](http://www.iecex.com).

Certificate issued by:

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





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Manufacturer: **Hawke International**  
A Division of Hubbell Limited  
A Member of the Hubbell Group of Companies  
Oxford Street West  
Ashton-under-Lyne  
Lancashire  
OL7 0NA  
**United Kingdom**

Additional Manufacturing location(s):

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 apparatus 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:

<b>IEC 60079-0 : 2011</b> Edition:6.0	Explosive atmospheres - Part 0: General requirements
<b>IEC 60079-1 : 2014-06</b> Edition:7.0	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
<b>IEC 60079-31 : 2013</b> Edition:2	Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"

*This Certificate **does not** indicate compliance with electrical 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 Report:

<a href="#">GB/BAS/ExTR12.0014/00</a>	<a href="#">GB/BAS/ExTR12.0313/00</a>	<a href="#">GB/BAS/ExTR13.0215/00</a>
<a href="#">GB/BAS/ExTR13.0220/00</a>	<a href="#">GB/BAS/ExTR14.0034/00</a>	<a href="#">GB/BAS/ExTR14.0183/00</a>
<a href="#">GB/BAS/ExTR14.0303/00</a>	<a href="#">GB/BAS/ExTR15.0019/00</a>	<a href="#">GB/BAS/ExTR17.0079/00</a>
<a href="#">GB/BAS/ExTR18.0080/00</a>	<a href="#">GB/BAS/ExTR19.0038/00</a>	

#### Quality Assessment Report:

[GB/BAS/QAR06.0061/07](#)



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## Schedule

### EQUIPMENT:

*Equipment and systems covered by this certificate are as follows:*

The MKIV Range of ControlEx Connectors may be manufactured in brass, steel, stainless steel or bronze, and each comprise a cylindrical body section which may take the form of a Type CP In-line Connector with a male mating flame path, a Type CR In-line Connector with a female mating flamepath or a Type BR Bulkhead Connector, also with a female mating flamepath.

When joined the male and female parts are secured with a threaded locking ring which is fixed and locked to the male half with hexagon socket grub screws. When separated the connection chambers are closed with flameproof caps which are secured and locked in the same manner.

The cylindrical body sections are used to house a variety of electrical plug & socket arrangements which are keyed into position by a cemented socket head screw passing through the side wall of the enclosure. The plug and socket arrangement of the in-line connector assembly is supported from the rear by a non-metallic ferrule.

In the bulkhead assemblies the support ferrule is compressible and also acts as a former for the polyurethane potting compound, these together create a sealing plug in the rear cable entry.

At the rear of the in-line units is a compression element and securing ring arrangement, the securing ring is locked with hexagon socket grub screws. The compression element includes a female entry thread for the accommodation of the Type BR range of reducers and/or adaptors to NPT thread form, or flameproof cable entry devices suitable for the cable and the conditions of use, and be certified as Equipment (not a Component).

At the rear of the bulkhead units a compression element and a male entry thread is provided for connection through the wall of bulkheads or flameproof enclosures.

The connectors are available in a range of seven sizes, based on the size of the in-line connector metric rear entry thread i.e. 16, 25, 32, 40, 50, and 63. The actual entry thread of the equivalent size bulkhead connector is one size larger, i.e. M25 to M75.

CONNECTOR SIZE	Max Ambient = 40°C		Max Ambient = 50°C		Max Ambient = 60°C	
	Temperature Class		Temperature Class		Temperature Class	
	T6/T80°C	T5/T95°C	T6/T80°C	T5/T95°C	T6/T80°C	T5/T95°C
16	5W	7W	4W	6W	2.6W	4.6W
25	8W	11W	6W	10W	4W	7W
32	10.5W	14.5W	8W	12W	5.4W	9W
40	12W	17W	9W	14W	5.5W	10.5W
50	13W	20W	10W	17W	6.5W	12.5W
63	17W	29W	13W	24W	8.5W	17W

### Variation 0.1.

To allow interconnection with the ControlEx Connectors certified under IECEx BAS 08.0063X.



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**SPECIFIC CONDITIONS OF USE: YES as shown below:**

1. These connectors must be electrically isolated before any attempt is made to remove the covers or join or separate the two halves.
2. When separated the flameproof caps shall be fitted and locked before any associated supply cables are re-energised.
3. The cable entry devices selected for use with the in-line connectors shall provide a mechanical cable retention facility appropriate to the cable type and conditions of service.
4. The cables terminated within the bulkhead connectors shall be mechanically protected from pulling and twisting, and the potted ferrule shall not be subjected to temperatures exceeding 100°C.
5. When used in dust environments the cable entry threads, or bulkhead mounting, shall be sealed in accordance with the installation code of practice to ensure that a minimum ingress protection level of IP66 is maintained.
6. The User must ensure that the maximum working voltage used is suitable for the type of connector used. For reference use Annex





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## DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

### Variation 10.1

To allow modification of drawing number 6907 such that it includes new part numbers for the keyway tube.

### Variation 10.2

To allow the modification of the keyway design, such that there is distinction between the CR and CP versions.

### Variation 10.3

To permit the increase of the recommended maximum voltage for connectors of size Ex 40 4x25 and Ex 40 4x35sq mm + Grd, from 750V to 1000V.

ExTR: GB/BAS/ExTR19.0038/00	File Reference: 19/0044
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### Annex:

[IECEX BAS 12.0006X Annex 5.pdf](#)

CONTROLEX MKIV	Pin Configuration	Upper Ambient Temperature of -40°C		Upper Ambient Temperature of +50°C		Upper Ambient temperature of +60°C		ATEX/IECEX/Inmetro Recommended max Voltage AC/Dc	CSA Recommended Max Voltage AC/DC
		T6	T5	T6	T5	T6	T5		
Connector Size		Maximum Current per Contact Amp		Maximum Current per Contact Amp		Maximum Current per Contact Amp			
<b>Ex 16</b>									
3x1.5sq mm + Grd	3x16 AWG +Grd	9.8	10	8.75	10	7	9.4	750	600
4x1.5sq mm + Grd	4x16 AWG +Grd	8.5	10	7.6	9.3	6.1	8.15	750	600
<b>Ex 25</b>									
4 x 1.5 sq mm + Grd	4x16 AWG +Grd	10	10	9.3	10	7.6	10	750	600
9 x 15 sq mm + Grd	9x16 AWG +Grd	7.15	8.4	6.2	8	5	6.7	750	600
12 sq mm + Grd 1x.5	12x16 AWG +Grd	6.2	7.25	5.35	6.9	4.38	5.8	750	600
4 x 2 sq mm + Grd.5	4x12 AWG +Grd	13.5	15.8	11.7	15	9.5	12.6	750	600
7 x 2.5sq mm + Grd	7x12 AWG +Grd	10.2	12	8.8	11.4	7.2	9.5	750	600
4 x 6 sq mm + Grd	4x10 AWG +Grd	19.2	22.5	16.6	21.5	13.5	18	750	600
4 x 6 sq mm + Grd 4 sq mm cable	4x11 AWG +Grd	19	19	14	18	11	15	750	600
<b>Ex 32</b>									
12 x 1.5 sq mm + Grd	12x16 AWG +Grd	7	8.3	6.2	7.6	5.1	6.5	750	600
19 x 1.5 sq mm + Grd	19x16 AWG +Grd	5.6	6.6	4.9	9	4	5.2	750	600
10 x2.5 sq mm + Grd	10x12 AWG +Grd	9.8	11.5	8.5	10.4	7	9	750	600
<b>12 x 2.5 sq mm + Grd</b>	<b>12x12 AWG +Grd</b>	<b>8.9</b>	<b>10.5</b>	<b>7.8</b>	<b>9.5</b>	<b>6.4</b>	<b>8.2</b>	<b>1000</b>	<b>600</b>
4 x 6 sq mm + Grd	4x10 AWG +Grd	22	25.9	19.2	23.5	15.8	20.4	750	600
4x6 sq mm + Grd 4sq mm cable	4x11 AWG +Grd	18	21	16.0	19	13.0	17.0	750	600
6x6 sq mm + Grd	6x10 AWG +Grd	18	21.1	15.7	19.2	12.9	16.6	750	600
6 x 6 sq mm + Grd 4sq mm cable	6x11 AWG +Grd	15	17	13.0	16.0	10	14.0	750	600
3x 10 sq mm + Grd	3x8 AWG +Grd	32.5	38.2	28.4	34.8	23.3	30.1	750	600
4 x 10	4x8 AWG +Grd	28	33.1	24.1	30	20.2	26.1	750	600
3 x 16 sq mm + Grd	3x6 AWG +Grd	38	44.8	33.3	40.8	27.3	35.3	750	600
4 x 16 sq mm + Grd	4x6 AWG +Grd	33	38.8	28.8	35.3	23.7	30.6	750	600
<b>Ex 40</b>									
24x1.5 sq mm + Grd	24x16 AWG +Grd	5.3	6.3	4.6	5.8	3.7	5	750	600
<b>30 x1.5 sq mm + Grd</b>	<b>30x16 AWG +Grd</b>	<b>4.8</b>	<b>5.7</b>	<b>4.1</b>	<b>5.1</b>	<b>3.3</b>	<b>4.4</b>	<b>1000</b>	<b>600</b>
19x2.5 sq mm + Grd	19x12 AWG +Grd	7.6	9	6.5	8.2	5.3	7.1	750	600
<b>4x25 sq mm + Grd</b>	<b>4x4 AWG +Grd</b>	<b>40</b>	<b>48.5</b>	<b>35.3</b>	<b>44</b>	<b>28.6</b>	<b>38.1</b>	<b>1000</b>	<b>600</b>
<b>4x35 sq mm + Grd</b>	<b>4x1 AWG +Grd</b>	<b>44.7</b>	<b>53.2</b>	<b>38.7</b>	<b>48.3</b>	<b>31.3</b>	<b>41.8</b>	<b>1000</b>	<b>600</b>
8x6 sq mm + Grd	4x10 AWG +Grd	16	19.5	14	18	11.5	15.5	750	600
8x6 sq mm + Grd 4sq mm cable	4x11 AWG +Grd	14	16	12.0	15.0	9.0	13.0	750	600
5x10 sq mm + Grd	5x8 AWG +Grd	26	32	23	29	18.5	25	750	600
5x16 sq mm + Grd	5x6 AWG +Grd	31.5	37.5	27	34	22	29.5	750	600
<b>Ex40 (special)4x2.5</b>	<b>4x12 AWG +Grd</b>	<b>16</b>	<b>17</b>	<b>14</b>	<b>17</b>	<b>11</b>	<b>15</b>	<b>3000</b>	<b>N/A</b>
<b>Ex 50</b>									
5x25 sq mm +Grd	5x4 AWG + Grd	38.01	47.14	33.33	43.46	26.87	37.27	750	N/A
5x35 sq mm +Grd	5x1 AWG + Grd	41.63	51.64	36.51	47.61	29.44	40.82	750	N/A
37x1.5 sq mm + Grd	37x16 AWG +Grd	4.5	5.5	3.9	5.1	3.1	4.4	750	600
27x2.5 sq mm + Grd	27x12 AWG +Grd	6.6	8.2	5.8	7.6	4.6	6.5	750	600
37x2.5 sq mm + Grd	37x12 AWG +Grd	5.6	7	4.9	6.4	4	5.5	300	600
13x6 sq mm + Grd	13x10 AWG +Grd	13.5	16.5	11.5	15.5	9.5	13.2	750	600
13x6 sq mm + Grd 4sq mm cable	13x11 AWG +Grd	11	14	10	13	8	11	750	600

CONTROLEX MKIV	Pin Configuration	Upper Ambient Temperature of -40°C		Upper Ambient Temperature of +50°C		Upper Ambient temperature of +60°C		ATEX / IECEx / Inmetro Recommended max Voltage AC/Dc	CSA Recommended Max Voltage AC/DC
		T6	T5	T6	T5	T6	T5		
Connector Size		Maximum Current per Contact Amp		Maximum Current per Contact Amp		Maximum Current per Contact Amp			
Ex63									
37x2.5 sq mm + Grd	37x12 AWG +Grd	5.6	7	4.9	6.4	4	5.5	750	600
49x1.5 sq mm + Grd	49x16 AWG +Grd	4.4	5.8	3.9	5.3	3.1	4.4	750	600
60x1.5 sq mm + Grd	60x16 AWG +Grd	5	6.6	4.4	6	3.6	5	750	600
65x1.5 sq mm +Grd	65x16 AWG + Grd	3.89	5.08	3.40	4.62	2.75	3.89	750	N/A
73x1.5 sq mm +Grd	73x16 AWG + Grd	3.67	4.79	3.21	4.36	2.59	3.67	750	N/A

Contact Size	Combined Cable and Contact Resistance (Ohms)		Contact Current Rating (Amps)
	Soldered	Crimped	
1.5 sq mm	0.0166	0.0173	10
2.5 sq mm	0.0102	0.0109	17
6 sq mm for 4 sq mm cable	0.0069	0.0076	30
6 sq mm	0.0047	0.0054	30
10 sq mm	0.0027	0.0033	78
16sq mm	0.0018	0.0024	78
25sq mm	0.0012	0.0018	125
35sq mm	0.0009	0.0015	125

Note - the 6 sq mm contact accepts both 4 sq mm and 6 sq mm cables.

CONNECTOR SIZE	Max Ambient = 40 °C		Max Ambient = 50 °C		Max Ambient = 60 °C	
	Temperature Class		Temperature Class		Temperature Class	
	T6/T80 °C	T5/T95 °C	T6/T80 °C	T5/T95 °C	T6/T80 °C	T5/T95 °C
16	5W	7W	4W	6W	2.6W	4.6W
25	8W	11W	6W	10W	4W	7W
32	10.5W	14.5W	8W	12W	5.4W	9W
40	12W	17W	9W	14W	5.5W	10.5W
40R	11W	16W	8W	13W	4.5W	9.5W
50	13W	20W	10W	17W	6.5W	12.5W
63	17W	29W	13W	24W	8.5W	17W