

Certificate of  
Conformity & EC  
Declaration of  
Conformity

## EC Declaration of Conformity

In accordance with BS EN ISO/IEC 17050-1:2004

We: **Blue Manta International**  
**5 Kirkton Avenue**  
**Pitmedden Road Industrial estate**  
**Dyce**  
**Aberdeen**

Declare that:

Equipment: Electrical Container  
Classification: Group II Category 3 G IIB T3 c x  
Serial number: EL-0152

Is in accordance with the following Directives:

**94/9/EC** **Conforms with the Essential Health and Safety Requirements of the Equipment in Explosive Atmospheres (ATEX) Directive.**  
**2004/108/EC** **Conforms with the Electromagnetic Compatibility Regulations 2006.**

And has been designed and manufactured to the relevant parts of the following harmonised standards:

|                  |                                                                                                                                      |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| EN 13463-1: 2009 | Non – electrical equipment for use in potentially explosive atmospheres<br>Part 1: Basic methods and requirements.                   |
| EN 13463-5: 2011 | Non-electrical equipment intended for use in potentially explosive atmospheres.<br>Protection by constructional safety 'c'           |
| EN 15198: 2007   | Methodology for risk assessment of non-electrical equipment and components<br>for intended use in potentially explosive atmospheres. |
| EN 7671: 2008    | Requirements for electrical installations. IET Wiring Regulations.                                                                   |
| EN 60079-0       | Explosive atmospheres – Part 0: Equipment – General requirements.                                                                    |
| EN 60079-1       | Explosive atmospheres. Part 1 Equipment protection by flameproof<br>enclosures "d"                                                   |
| EN 60079-7       | Explosive atmospheres. Part 7 Equipment protection by increased safety "e"                                                           |
| EN 60079-11      | Explosive atmospheres. Equipment protection by intrinsic safety "i"                                                                  |
| EN 60079-18      | Explosive atmospheres. Equipment protection by encapsulation "m"                                                                     |

And is compliance with the following additional standards:

|                    |                                                                                |
|--------------------|--------------------------------------------------------------------------------|
| DNV 2.7-1: 2006    | Standard for Certification of Offshore Containers 2006                         |
| Lloyds LRCCS: 2010 | Lloyds Register EMEA Container Certification Scheme 2010                       |
| EN 12079-1: 2006   | Offshore Container and Associated Lifting Sets                                 |
| EN 60079-14        | Explosive atmospheres. Electrical installations design, selection and erection |
| EN 60079-17        | Explosive atmospheres. Electrical installations inspection and maintenance     |



Special Conditions for safe use:

1. No unauthorised modifications to be carried out without the express permission of Blue Manta International as this may invalidate ATEX certification.
2. The unit must be effectively bonded to the structure of the offshore installation.
3. Workshop activities not considered by this declaration, all activities to be separately assessed.

I hereby declare that the equipment named above has been manufactured and tested and found to comply with the relevant sections of the above referenced directives and standards.

A handwritten signature in black ink, appearing to read "Ally Thomson".

Signature: ..... Name:.....Ally Thomson.....  
(Responsible Person)

Position: .....Base Manager..... Date: ..... 10/03/2011.....



# IECEX CoC Certified Service Facility

## 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 S0009 issue No.:0 Certificate history:

Status: **Current** Date of Issue: **2010-05-28**

Applicant: **Dowding and Mills (UK) Limited**  
Pitmedden Road Industrial Estate,  
Dyce,  
Aberdeen,  
AB21 0BF  
United Kingdom

Type of Service: **Repair and Overhaul according to IEC 60079-19**

Type of Protection: Flameproof Enclosure "d"  
Increased Safety "e"  
Type of Protection "n"

Scope of Service: **Repair & Overhaul of Rotating Machines, Exd, Exe, Exn, together with Enclosures, Exd & Exe Exed**  
**Also Replacement of Motor Shaft Bearings Offshore**

Locations covered by this Certificate: **As Above**

Facility Audit Report: [GB/BAS/FAR10.0003/00](#)

*This certificate is issued as verification that the Service Facility and associated locations were assessed and found to comply with the IECEx Scheme requirements, relating to the type and scope of service listed above. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 03 and Operational Documents as amended.*

Approved for issue on behalf of the IECEx Certification Body: *PP* Ron Sinclair *M POWNEY*

Position:

Managing Director

Signature:

*M Powney*  
\_\_\_\_\_  
*28/5/10*  
\_\_\_\_\_

Date:

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.

Certificate issued by:

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





# Engineer Report



**Unparalleled** in Engineering Services

## Hazardous Area Equipment Inspection Report

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**QE Reference: 1094865-100**

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**UNIT ADDRESS:**

Quartzelec Ltd  
Unit 12  
Hareness Park  
Aberdeen  
AB12 3QY

**CONTACT:**

**Robert Laidlaw**  
Business Development Manager

T: 01224 593008

M: 07703 836739

E: [Robert.laidlaw@quartzelec.com](mailto:Robert.laidlaw@quartzelec.com)

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**To:** Fraser Barclay

**From:** Quartzelec Ltd.

**Date:** 05 September 2023

### Details of Equipment

|                           |             |
|---------------------------|-------------|
| <b>Customer</b>           | Blue Manta  |
| <b>Location</b>           | Dyce        |
| <b>QE Reference</b>       | 1094865-100 |
| <b>Customer Reference</b> | EL-0152     |

### 1. Summary of Work

Quartzelec were asked to carry out Ex inspections on EL-0152. All inspection reports and details are as followed;

Also installed a new supply cable with plug for the 110v Heater.



## 2. 110V Plug

### 2.1 Electrical Equipment Details Form

(Electrical Installation Inspection & Maintenance Conducted to BS EN 60079-17:2014)

|                       |           |                  |                 |
|-----------------------|-----------|------------------|-----------------|
| Equipment Description | 110V Plug | Manufacturer     | CEAG            |
| Serial Number         | -         | Type/Part Number | GHG5117304R0001 |
| Equipment ID          | -         |                  |                 |

|                |     |                    |     |
|----------------|-----|--------------------|-----|
| Voltage (V)    | 130 | Current Rating (A) | 16  |
| KW/HP          | -   | Wattage (W)        | n/a |
| AC/DC          | AC  | RPM                | n/a |
| Frequency (Hz) | -   | Frame              | n/a |

|                   |     |                         |              |
|-------------------|-----|-------------------------|--------------|
| EX Type           | de  | Certification Authority | PTB          |
| Class / Gas Group | IIC | Certification Number    | 99 ATEX 1039 |
| T Class           | T6  |                         |              |
| IP Rating         | 66  |                         |              |

| Record of Equipment Entries |          |             |
|-----------------------------|----------|-------------|
| Entry Size                  | Quantity | Gland Type  |
| -                           | 1        | Compression |
|                             |          |             |
|                             |          |             |
|                             |          |             |
|                             |          |             |
|                             |          |             |
|                             |          |             |
|                             |          |             |
|                             |          |             |

|                                                                                               |
|-----------------------------------------------------------------------------------------------|
| <b>Any other comments/general recommendations or observations should be documented below.</b> |
| Braid not connected, re-made end and connected braiding to Earth.                             |

The signature below confirms that on the completion of this inspection, the security of panels have been checked, fixtures secured and bolts etc. have been correctly tightened in line with the manufacturers recommended settings.

|               |         |                      |                                                                                      |        |            |
|---------------|---------|----------------------|--------------------------------------------------------------------------------------|--------|------------|
| Inspected By: | R. Lang | Engineers Signature: |  | Date : | 05/09/2023 |
|---------------|---------|----------------------|--------------------------------------------------------------------------------------|--------|------------|

## 2.2 Ex Inspection Sheet

|                  |                 |                         |                  |
|------------------|-----------------|-------------------------|------------------|
| Item Description | 110V Plug       | Protection Type         | de               |
| Model Number     | GHG5117304R0001 | Certification Number    | PTB 99 ATEX 1039 |
| Serial Number    | -               | Gas Group/Temp Class/IP | IIC/T6/IP66      |

| Inspection schedule for Ex d,e,m,n Installations.<br>Satisfactory ✓ Unsatisfactory x Repaired R Not Applicable n/a Other O |                                                                                                                                                                                                             | Grade of Inspection |          |       |        |
|----------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|----------|-------|--------|
|                                                                                                                            |                                                                                                                                                                                                             | EX Type             | Detailed | Close | Visual |
| <b>A</b>                                                                                                                   | <b>APPARATUS</b>                                                                                                                                                                                            |                     |          |       |        |
| 1.                                                                                                                         | Apparatus is appropriate to area classification. (EPL/Zone requirements)                                                                                                                                    | d,e,m,n             | O        |       |        |
| 2.                                                                                                                         | Apparatus group is correct.                                                                                                                                                                                 | d,e,m,n             | O        |       |        |
| 3.                                                                                                                         | Apparatus temperature class is correct. (Gas only)                                                                                                                                                          | d,e,m,n             | O        |       |        |
| 4.                                                                                                                         | Apparatus circuit identification is correct and available                                                                                                                                                   | d,e,m,n             | O        |       |        |
| 5.                                                                                                                         | Degree of protection (IP) of equipment is appropriate for the level of protection/group. (no sign of water or dust ingress)                                                                                 | d,e,m,n             | ✓        |       |        |
| 6.                                                                                                                         | Enclosure, glasses and glass to metal sealing gaskets and/or compounds are satisfactory.                                                                                                                    | d,e,m,n             | ✓        |       |        |
| 7.                                                                                                                         | There is no damage or evidence of unauthorised modifications                                                                                                                                                | d,e,m,n             | ✓        |       |        |
| 8.                                                                                                                         | Threaded covers on enclosures are of the correct type and they are tight and secure                                                                                                                         | d,e,m,n             | n/a      |       |        |
| 9.                                                                                                                         | Bolts, cable, entry devices (direct and indirect) and blanking elements are of the correct type and are complete and tight.                                                                                 | d,e,m,n             | ✓        |       |        |
| 10.                                                                                                                        | Joint surfaces are clean and undamaged and gaskets, if any, are satisfactory and positioned correctly and free from damage and defect                                                                       | d,e,m,n             | n/a      |       |        |
| 11.                                                                                                                        | Dimensions of flanged joint gaps are within the limits in accordance with manufacturers documentation and are within maximum values permitted by relevant construction standard at the time of installation | d,e,m,n             | n/a      |       |        |
| 12.                                                                                                                        | Electrical connections are tight and all unused terminals are tightened                                                                                                                                     | d,e,m,n             | ✓        |       |        |
| 13.                                                                                                                        | Enclosed-break & hermetically sealed devices are undamaged                                                                                                                                                  | d,e,m,n             | n/a      |       |        |
| 14.                                                                                                                        | Flameproof & encapsulated components are undamaged                                                                                                                                                          | d,m,n               | ✓        |       |        |
| 15.                                                                                                                        | Restricted breathing enclosure is satisfactory (type nR only)                                                                                                                                               | n                   | n/a      |       |        |
| 16.                                                                                                                        | Test port if fitted is functional (type nR only)                                                                                                                                                            | n                   | n/a      |       |        |
| 17.                                                                                                                        | Breathing operation is satisfactory (type nR only)                                                                                                                                                          | n                   | n/a      |       |        |
| 18.                                                                                                                        | Fluorescent, HID lamps show no EOL (end of life effects) & type, rating & pin configuration & position are correct                                                                                          | d,e,m,n             | n/a      |       |        |
| 19.                                                                                                                        | Motor fans have sufficient clearance to the enclosure and/or covers cooling systems are undamaged, motor foundations have no indentations or cracks & the ventilation airflow is not impeded                | d,e,m,n             | n/a      |       |        |
| 20.                                                                                                                        | The insulation resistance (IR) of the motor windings is satisfactory                                                                                                                                        | d,e,m,n             | n/a      |       |        |
| 21.                                                                                                                        | Type of cable is appropriate and free from obvious damage                                                                                                                                                   | d,e,m,n             | ✓        |       |        |
| 22.                                                                                                                        | Sealing of trunking, ducts, pipes and/or conduits is satisfactory                                                                                                                                           | d,e,m,n             | n/a      |       |        |
| 23.                                                                                                                        | Stopping boxes and cables boxes are correctly filled & integrity of conduit system and interface with mixed system is maintained                                                                            | d,e,m,n             | n/a      |       |        |
| 24.                                                                                                                        | Earthing connections, including any supplementary earth bonding connections are satisfactory (for example connections are tight and conductors are of sufficient CSA)                                       | d,e,m,n             | R        |       |        |
| 25.                                                                                                                        | Automatic electrical protective devices are set correctly (auto reset not possible)                                                                                                                         | d,e,m,n             | n/a      |       |        |
| 26.                                                                                                                        | Automatic electrical protective devices operate within permitted limits                                                                                                                                     | d,e,m,n             | n/a      |       |        |
| 27.                                                                                                                        | Variable voltage/frequency installation complies with documentation                                                                                                                                         | d,e,m,n             | n/a      |       |        |
| 28.                                                                                                                        | No undue accumulation of dust and dirt and electrical insulation is clean & dry                                                                                                                             | d,e,m,n             | ✓        |       |        |
| 29.                                                                                                                        | Specific conditions of use (if applicable) are complied with                                                                                                                                                | d,e,m,n             | ✓        |       |        |
| 30.                                                                                                                        | Cables not in use are correctly terminated                                                                                                                                                                  | d,e,m,n             | n/a      |       |        |
| 31.                                                                                                                        | Obstructions adjacent to flameproof flanged joints are in accordance with IEC 60079-14 (IIA-10mm IIB-30mm IIC-40mm)                                                                                         | d,e,m,n             | n/a      |       |        |
| 32.                                                                                                                        | Equipment is adequately protected against corrosion, weather, vibration & other adverse factors                                                                                                             | d,e,m,n             | ✓        |       |        |

### 3. Junction Box

#### 3.1 Electrical Equipment Details Form

(Electrical Installation Inspection & Maintenance Conducted to BS EN 60079-17:2014)

|                       |              |                  |            |
|-----------------------|--------------|------------------|------------|
| Equipment Description | Junction Box | Manufacturer     | Bartec     |
| Serial Number         | 01-002909    | Type/Part Number | OTB-122/06 |
| Equipment ID          | -            |                  |            |

|                |     |                    |     |
|----------------|-----|--------------------|-----|
| Voltage (V)    | 550 | Current Rating (A) | 15  |
| KW/HP          | -   | Wattage (W)        | 4   |
| AC/DC          |     | RPM                | n/a |
| Frequency (Hz) | -   | Frame              | n/a |

|                   |    |                         |               |
|-------------------|----|-------------------------|---------------|
| EX Type           | e  | Certification Authority | BAS           |
| Class / Gas Group | II | Certification Number    | 98 ATEX 3008X |
| T Class           | T6 |                         |               |
| IP Rating         | 66 |                         |               |

| Record of Equipment Entries |          |                     |
|-----------------------------|----------|---------------------|
| Entry Size                  | Quantity | Gland Type          |
| M20                         | 2        | 501/453 Univ O      |
| M20                         | 2        | Raxton Exe Stoppers |
|                             |          |                     |
|                             |          |                     |
|                             |          |                     |
|                             |          |                     |
|                             |          |                     |

|                                                                                               |
|-----------------------------------------------------------------------------------------------|
| <b>Any other comments/general recommendations or observations should be documented below.</b> |
| Replaced 1x broken terminal.<br>Fitted lock rings to glands.                                  |

The signature below confirms that on the completion of this inspection, the security of panels have been checked, fixtures secured and bolts etc. have been correctly tightened in line with the manufacturers recommended settings.

|               |         |                      |                                                                                      |        |            |
|---------------|---------|----------------------|--------------------------------------------------------------------------------------|--------|------------|
| Inspected By: | R. Lang | Engineers Signature: |  | Date : | 05/09/2023 |
|---------------|---------|----------------------|--------------------------------------------------------------------------------------|--------|------------|



### 3.2 Ex Inspection Sheet

|                  |              |                         |                   |
|------------------|--------------|-------------------------|-------------------|
| Item Description | Junction Box | Protection Type         | e                 |
| Model Number     | OTB-122/06   | Certification Number    | BAS 98 ATEX 3008X |
| Serial Number    | 01-002909    | Gas Group/Temp Class/IP | II/T6/IP66        |

| Inspection schedule for Ex d,e,m,n Installations.<br>Satisfactory ✓ Unsatisfactory x Repaired R Not Applicable n/a Other O |                                                                                                                                                                                                             | EX Type | Grade of Inspection |       |        |
|----------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------------------|-------|--------|
|                                                                                                                            |                                                                                                                                                                                                             |         | Detailed            | Close | Visual |
| A                                                                                                                          | APPARATUS                                                                                                                                                                                                   |         |                     |       |        |
| 1.                                                                                                                         | Apparatus is appropriate to area classification. (EPL/Zone requirements)                                                                                                                                    | d,e,m,n | O                   |       |        |
| 2.                                                                                                                         | Apparatus group is correct.                                                                                                                                                                                 | d,e,m,n | O                   |       |        |
| 3.                                                                                                                         | Apparatus temperature class is correct. (Gas only)                                                                                                                                                          | d,e,m,n | O                   |       |        |
| 4.                                                                                                                         | Apparatus circuit identification is correct and available                                                                                                                                                   | d,e,m,n | O                   |       |        |
| 5.                                                                                                                         | Degree of protection (IP) of equipment is appropriate for the level of protection/group. (no sign of water or dust ingress)                                                                                 | d,e,m,n | ✓                   |       |        |
| 6.                                                                                                                         | Enclosure, glasses and glass to metal sealing gaskets and/or compounds are satisfactory.                                                                                                                    | d,e,m,n | ✓                   |       |        |
| 7.                                                                                                                         | There is no damage or evidence of unauthorised modifications                                                                                                                                                | d,e,m,n | ✓                   |       |        |
| 8.                                                                                                                         | Threaded covers on enclosures are of the correct type and they are tight and secure                                                                                                                         | d,e,m,n | n/a                 |       |        |
| 9.                                                                                                                         | Bolts, cable, entry devices (direct and indirect) and blanking elements are of the correct type and are complete and tight.                                                                                 | d,e,m,n | R                   |       |        |
| 10.                                                                                                                        | Joint surfaces are clean and undamaged and gaskets, if any, are satisfactory and positioned correctly and free from damage and defect                                                                       | d,e,m,n | n/a                 |       |        |
| 11.                                                                                                                        | Dimensions of flanged joint gaps are within the limits in accordance with manufacturers documentation and are within maximum values permitted by relevant construction standard at the time of installation | d,e,m,n | n/a                 |       |        |
| 12.                                                                                                                        | Electrical connections are tight and all unused terminals are tightened                                                                                                                                     | d,e,m,n | ✓                   |       |        |
| 13.                                                                                                                        | Enclosed-break & hermetically sealed devices are undamaged                                                                                                                                                  | d,e,m,n | n/a                 |       |        |
| 14.                                                                                                                        | Flameproof & encapsulated components are undamaged                                                                                                                                                          | d,m,n   | n/a                 |       |        |
| 15.                                                                                                                        | Restricted breathing enclosure is satisfactory (type nR only)                                                                                                                                               | n       | n/a                 |       |        |
| 16.                                                                                                                        | Test port if fitted is functional (type nR only)                                                                                                                                                            | n       | n/a                 |       |        |
| 17.                                                                                                                        | Breathing operation is satisfactory (type nR only)                                                                                                                                                          | n       | n/a                 |       |        |
| 18.                                                                                                                        | Fluorescent, HID lamps show no EOL (end of life effects) & type, rating & pin configuration & position are correct                                                                                          | d,e,m,n | n/a                 |       |        |
| 19.                                                                                                                        | Motor fans have sufficient clearance to the enclosure and/or covers cooling systems are undamaged, motor foundations have no indentations or cracks & the ventilation airflow is not impeded                | d,e,m,n | n/a                 |       |        |
| 20.                                                                                                                        | The insulation resistance (IR) of the motor windings is satisfactory                                                                                                                                        | d,e,m,n | n/a                 |       |        |
| 21.                                                                                                                        | Type of cable is appropriate and free from obvious damage                                                                                                                                                   | d,e,m,n | ✓                   |       |        |
| 22.                                                                                                                        | Sealing of trunking, ducts, pipes and/or conduits is satisfactory                                                                                                                                           | d,e,m,n | n/a                 |       |        |
| 23.                                                                                                                        | Stopping boxes and cables boxes are correctly filled & integrity of conduit system and interface with mixed system is maintained                                                                            | d,e,m,n | n/a                 |       |        |
| 24.                                                                                                                        | Earthing connections, including any supplementary earth bonding connections are satisfactory (for example connections are tight and conductors are of sufficient CSA)                                       | d,e,m,n | ✓                   |       |        |
| 25.                                                                                                                        | Automatic electrical protective devices are set correctly (auto reset not possible)                                                                                                                         | d,e,m,n | n/a                 |       |        |
| 26.                                                                                                                        | Automatic electrical protective devices operate within permitted limits                                                                                                                                     | d,e,m,n | n/a                 |       |        |
| 27.                                                                                                                        | Variable voltage/frequency installation complies with documentation                                                                                                                                         | d,e,m,n | n/a                 |       |        |
| 28.                                                                                                                        | No undue accumulation of dust and dirt and electrical insulation is clean & dry                                                                                                                             | d,e,m,n | ✓                   |       |        |
| 29.                                                                                                                        | Specific conditions of use (if applicable) are complied with                                                                                                                                                | d,e,m,n | ✓                   |       |        |
| 30.                                                                                                                        | Cables not in use are correctly terminated                                                                                                                                                                  | d,e,m,n | n/a                 |       |        |
| 31.                                                                                                                        | Obstructions adjacent to flameproof flanged joints are in accordance with IEC 60079-14 (IIA-10mm IIB-30mm IIC-40mm)                                                                                         | d,e,m,n | n/a                 |       |        |
| 32.                                                                                                                        | Equipment is adequately protected against corrosion, weather, vibration & other adverse factors                                                                                                             | d,e,m,n | ✓                   |       |        |



#### 4. MCB Box

##### 4.1 Electrical Equipment Details Form

(Electrical Installation Inspection & Maintenance Conducted to BS EN 60079-17:2014)

|                       |         |                  |             |
|-----------------------|---------|------------------|-------------|
| Equipment Description | MCB Box | Manufacturer     | PDC Systems |
| Serial Number         | 13273-1 | Type/Part Number | EJB 12A     |
| Equipment ID          | -       |                  |             |

|                |       |                    |    |
|----------------|-------|--------------------|----|
| Voltage (V)    | 480   | Current Rating (A) | 22 |
| KW/HP          | -     | Wattage (W)        | 10 |
| AC/DC          | AC    | RPM                | -  |
| Frequency (Hz) | 50/60 | Frame              | -  |

|                   |     |                         |               |
|-------------------|-----|-------------------------|---------------|
| EX Type           | d   | Certification Authority | LOM           |
| Class / Gas Group | IIB | Certification Number    | 03 ATEX 2046X |
| T Class           | T6  |                         |               |
| IP Rating         | 65  |                         |               |

| Record of Equipment Entries |          |                |
|-----------------------------|----------|----------------|
| Entry Size                  | Quantity | Gland Type     |
| M20                         | 3        | 501/453 Univ O |
| ½" NPT                      | 1        | Exde Stopper   |
|                             |          |                |
|                             |          |                |
|                             |          |                |
|                             |          |                |

|                                                                                        |
|----------------------------------------------------------------------------------------|
| Any other comments/general recommendations or observations should be documented below. |
|                                                                                        |

The signature below confirms that on the completion of this inspection, the security of panels have been checked, fixtures secured and bolts etc. have been correctly tightened in line with the manufacturers recommended settings.

|               |         |                      |                                                                                      |        |            |
|---------------|---------|----------------------|--------------------------------------------------------------------------------------|--------|------------|
| Inspected By: | R. Lang | Engineers Signature: |  | Date : | 05/09/2023 |
|---------------|---------|----------------------|--------------------------------------------------------------------------------------|--------|------------|

## 4.2 Ex Inspection Sheet

|                  |         |                         |                   |
|------------------|---------|-------------------------|-------------------|
| Item Description | MCB Box | Protection Type         | d                 |
| Model Number     | EJB 12A | Certification Number    | LOM 03 ATEX 2046X |
| Serial Number    | 13273-1 | Gas Group/Temp Class/IP | IIB/T6/IP65       |

| Inspection schedule for Ex d,e,m,n Installations.<br>Satisfactory ✓ Unsatisfactory x Repaired R Not Applicable n/a Other O |                                                                                                                                                                                                             | Grade of Inspection |          |       |        |
|----------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|----------|-------|--------|
|                                                                                                                            |                                                                                                                                                                                                             | EX Type             | Detailed | Close | Visual |
| A                                                                                                                          | APPARATUS                                                                                                                                                                                                   |                     |          |       |        |
| 1.                                                                                                                         | Apparatus is appropriate to area classification. (EPL/Zone requirements)                                                                                                                                    | d,e,m,n             | O        |       |        |
| 2.                                                                                                                         | Apparatus group is correct.                                                                                                                                                                                 | d,e,m,n             | O        |       |        |
| 3.                                                                                                                         | Apparatus temperature class is correct. (Gas only)                                                                                                                                                          | d,e,m,n             | O        |       |        |
| 4.                                                                                                                         | Apparatus circuit identification is correct and available                                                                                                                                                   | d,e,m,n             | O        |       |        |
| 5.                                                                                                                         | Degree of protection (IP) of equipment is appropriate for the level of protection/group. (no sign of water or dust ingress)                                                                                 | d,e,m,n             | ✓        |       |        |
| 6.                                                                                                                         | Enclosure, glasses and glass to metal sealing gaskets and/or compounds are satisfactory.                                                                                                                    | d,e,m,n             | ✓        |       |        |
| 7.                                                                                                                         | There is no damage or evidence of unauthorised modifications                                                                                                                                                | d,e,m,n             | ✓        |       |        |
| 8.                                                                                                                         | Threaded covers on enclosures are of the correct type and they are tight and secure                                                                                                                         | d,e,m,n             | n/a      |       |        |
| 9.                                                                                                                         | Bolts, cable, entry devices (direct and indirect) and blanking elements are of the correct type and are complete and tight.                                                                                 | d,e,m,n             | ✓        |       |        |
| 10.                                                                                                                        | Joint surfaces are clean and undamaged and gaskets, if any, are satisfactory and positioned correctly and free from damage and defect                                                                       | d,e,m,n             | ✓        |       |        |
| 11.                                                                                                                        | Dimensions of flanged joint gaps are within the limits in accordance with manufacturers documentation and are within maximum values permitted by relevant construction standard at the time of installation | d,e,m,n             | n/a      |       |        |
| 12.                                                                                                                        | Electrical connections are tight and all unused terminals are tightened                                                                                                                                     | d,e,m,n             | ✓        |       |        |
| 13.                                                                                                                        | Enclosed-break & hermetically sealed devices are undamaged                                                                                                                                                  | d,e,m,n             | n/a      |       |        |
| 14.                                                                                                                        | Flameproof & encapsulated components are undamaged                                                                                                                                                          | d,m,n               | n/a      |       |        |
| 15.                                                                                                                        | Restricted breathing enclosure is satisfactory (type nR only)                                                                                                                                               | n                   | n/a      |       |        |
| 16.                                                                                                                        | Test port if fitted is functional (type nR only)                                                                                                                                                            | n                   | n/a      |       |        |
| 17.                                                                                                                        | Breathing operation is satisfactory (type nR only)                                                                                                                                                          | n                   | n/a      |       |        |
| 18.                                                                                                                        | Fluorescent, HID lamps show no EOL (end of life effects) & type, rating & pin configuration & position are correct                                                                                          | d,e,m,n             | n/a      |       |        |
| 19.                                                                                                                        | Motor fans have sufficient clearance to the enclosure and/or covers cooling systems are undamaged, motor foundations have no indentations or cracks & the ventilation airflow is not impeded                | d,e,m,n             | n/a      |       |        |
| 20.                                                                                                                        | The insulation resistance (IR) of the motor windings is satisfactory                                                                                                                                        | d,e,m,n             | n/a      |       |        |
| 21.                                                                                                                        | Type of cable is appropriate and free from obvious damage                                                                                                                                                   | d,e,m,n             | ✓        |       |        |
| 22.                                                                                                                        | Sealing of trunking, ducts, pipes and/or conduits is satisfactory                                                                                                                                           | d,e,m,n             | n/a      |       |        |
| 23.                                                                                                                        | Stopping boxes and cables boxes are correctly filled & integrity of conduit system and interface with mixed system is maintained                                                                            | d,e,m,n             | n/a      |       |        |
| 24.                                                                                                                        | Earthing connections, including any supplementary earth bonding connections are satisfactory (for example connections are tight and conductors are of sufficient CSA)                                       | d,e,m,n             | ✓        |       |        |
| 25.                                                                                                                        | Automatic electrical protective devices are set correctly (auto reset not possible)                                                                                                                         | d,e,m,n             | n/a      |       |        |
| 26.                                                                                                                        | Automatic electrical protective devices operate within permitted limits                                                                                                                                     | d,e,m,n             | n/a      |       |        |
| 27.                                                                                                                        | Variable voltage/frequency installation complies with documentation                                                                                                                                         | d,e,m,n             | n/a      |       |        |
| 28.                                                                                                                        | No undue accumulation of dust and dirt and electrical insulation is clean & dry                                                                                                                             | d,e,m,n             | ✓        |       |        |
| 29.                                                                                                                        | Specific conditions of use (if applicable) are complied with                                                                                                                                                | d,e,m,n             | ✓        |       |        |
| 30.                                                                                                                        | Cables not in use are correctly terminated                                                                                                                                                                  | d,e,m,n             | n/a      |       |        |
| 31.                                                                                                                        | Obstructions adjacent to flameproof flanged joints are in accordance with IEC 60079-14 (IIA-10mm IIB-30mm IIC-40mm)                                                                                         | d,e,m,n             | ✓        |       |        |
| 32.                                                                                                                        | Equipment is adequately protected against corrosion, weather, vibration & other adverse factors                                                                                                             | d,e,m,n             | ✓        |       |        |

## 5. Light Switch

### 5.1 Electrical Equipment Details Form

(Electrical Installation Inspection & Maintenance Conducted to BS EN 60079-17:2014)

|                       |              |                  |                 |
|-----------------------|--------------|------------------|-----------------|
| Equipment Description | Light Switch | Manufacturer     | CEAG            |
| Serial Number         | -            | Type/Part Number | GHG2732000R0003 |
| Equipment ID          | -            |                  |                 |

|                |     |                    |    |
|----------------|-----|--------------------|----|
| Voltage (V)    | 250 | Current Rating (A) | 16 |
| KW/HP          | -   | Wattage (W)        | -  |
| AC/DC          | -   | RPM                | -  |
| Frequency (Hz) | -   | Frame              | -  |

|                   |     |                         |              |
|-------------------|-----|-------------------------|--------------|
| EX Type           | ed  | Certification Authority | PTB          |
| Class / Gas Group | IIC | Certification Number    | 98 ATEX 3121 |
| T Class           | T6  |                         |              |
| IP Rating         | 66  |                         |              |

| Record of Equipment Entries |          |                |
|-----------------------------|----------|----------------|
| Entry Size                  | Quantity | Gland Type     |
| M20                         | 2        | 501/453 Univ O |
|                             |          |                |
|                             |          |                |
|                             |          |                |
|                             |          |                |
|                             |          |                |
|                             |          |                |
|                             |          |                |

|                                                                                        |
|----------------------------------------------------------------------------------------|
| Any other comments/general recommendations or observations should be documented below. |
|                                                                                        |

The signature below confirms that on the completion of this inspection, the security of panels have been checked, fixtures secured and bolts etc. have been correctly tightened in line with the manufacturers recommended settings.

|               |         |                      |                                                                                      |        |            |
|---------------|---------|----------------------|--------------------------------------------------------------------------------------|--------|------------|
| Inspected By: | R. Lang | Engineers Signature: |  | Date : | 05/09/2023 |
|---------------|---------|----------------------|--------------------------------------------------------------------------------------|--------|------------|



## 5.2 Ex Inspection Sheet

|                  |                 |                         |                  |
|------------------|-----------------|-------------------------|------------------|
| Item Description | Light Switch    | Protection Type         | ed               |
| Model Number     | GHG2732000R0003 | Certification Number    | PTB 98 ATEX 3121 |
| Serial Number    | -               | Gas Group/Temp Class/IP | IIC/T6/IP66      |

| Inspection schedule for Ex d,e,m,n Installations.<br>Satisfactory ✓ Unsatisfactory x Repaired R Not Applicable n/a Other O |                                                                                                                                                                                                             | Grade of Inspection |          |       |        |
|----------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|----------|-------|--------|
|                                                                                                                            |                                                                                                                                                                                                             | EX Type             | Detailed | Close | Visual |
| A                                                                                                                          | APPARATUS                                                                                                                                                                                                   |                     |          |       |        |
| 1.                                                                                                                         | Apparatus is appropriate to area classification. (EPL/Zone requirements)                                                                                                                                    | d,e,m,n             | O        |       |        |
| 2.                                                                                                                         | Apparatus group is correct.                                                                                                                                                                                 | d,e,m,n             | O        |       |        |
| 3.                                                                                                                         | Apparatus temperature class is correct. (Gas only)                                                                                                                                                          | d,e,m,n             | O        |       |        |
| 4.                                                                                                                         | Apparatus circuit identification is correct and available                                                                                                                                                   | d,e,m,n             | O        |       |        |
| 5.                                                                                                                         | Degree of protection (IP) of equipment is appropriate for the level of protection/group. (no sign of water or dust ingress)                                                                                 | d,e,m,n             | ✓        |       |        |
| 6.                                                                                                                         | Enclosure, glasses and glass to metal sealing gaskets and/or compounds are satisfactory.                                                                                                                    | d,e,m,n             | ✓        |       |        |
| 7.                                                                                                                         | There is no damage or evidence of unauthorised modifications                                                                                                                                                | d,e,m,n             | ✓        |       |        |
| 8.                                                                                                                         | Threaded covers on enclosures are of the correct type and they are tight and secure                                                                                                                         | d,e,m,n             | n/a      |       |        |
| 9.                                                                                                                         | Bolts, cable, entry devices (direct and indirect) and blanking elements are of the correct type and are complete and tight.                                                                                 | d,e,m,n             | ✓        |       |        |
| 10.                                                                                                                        | Joint surfaces are clean and undamaged and gaskets, if any, are satisfactory and positioned correctly and free from damage and defect                                                                       | d,e,m,n             | n/a      |       |        |
| 11.                                                                                                                        | Dimensions of flanged joint gaps are within the limits in accordance with manufacturers documentation and are within maximum values permitted by relevant construction standard at the time of installation | d,e,m,n             | n/a      |       |        |
| 12.                                                                                                                        | Electrical connections are tight and all unused terminals are tightened                                                                                                                                     | d,e,m,n             | ✓        |       |        |
| 13.                                                                                                                        | Enclosed-break & hermetically sealed devices are undamaged                                                                                                                                                  | d,e,m,n             | n/a      |       |        |
| 14.                                                                                                                        | Flameproof & encapsulated components are undamaged                                                                                                                                                          | d,m,n               | ✓        |       |        |
| 15.                                                                                                                        | Restricted breathing enclosure is satisfactory (type nR only)                                                                                                                                               | n                   | n/a      |       |        |
| 16.                                                                                                                        | Test port if fitted is functional (type nR only)                                                                                                                                                            | n                   | n/a      |       |        |
| 17.                                                                                                                        | Breathing operation is satisfactory (type nR only)                                                                                                                                                          | n                   | n/a      |       |        |
| 18.                                                                                                                        | Fluorescent, HID lamps show no EOL (end of life effects) & type, rating & pin configuration & position are correct                                                                                          | d,e,m,n             | n/a      |       |        |
| 19.                                                                                                                        | Motor fans have sufficient clearance to the enclosure and/or covers cooling systems are undamaged, motor foundations have no indentations or cracks & the ventilation airflow is not impeded                | d,e,m,n             | n/a      |       |        |
| 20.                                                                                                                        | The insulation resistance (IR) of the motor windings is satisfactory                                                                                                                                        | d,e,m,n             | n/a      |       |        |
| 21.                                                                                                                        | Type of cable is appropriate and free from obvious damage                                                                                                                                                   | d,e,m,n             | ✓        |       |        |
| 22.                                                                                                                        | Sealing of trunking, ducts, pipes and/or conduits is satisfactory                                                                                                                                           | d,e,m,n             | n/a      |       |        |
| 23.                                                                                                                        | Stopping boxes and cables boxes are correctly filled & integrity of conduit system and interface with mixed system is maintained                                                                            | d,e,m,n             | n/a      |       |        |
| 24.                                                                                                                        | Earthing connections, including any supplementary earth bonding connections are satisfactory (for example connections are tight and conductors are of sufficient CSA)                                       | d,e,m,n             | ✓        |       |        |
| 25.                                                                                                                        | Automatic electrical protective devices are set correctly (auto reset not possible)                                                                                                                         | d,e,m,n             | n/a      |       |        |
| 26.                                                                                                                        | Automatic electrical protective devices operate within permitted limits                                                                                                                                     | d,e,m,n             | n/a      |       |        |
| 27.                                                                                                                        | Variable voltage/frequency installation complies with documentation                                                                                                                                         | d,e,m,n             | n/a      |       |        |
| 28.                                                                                                                        | No undue accumulation of dust and dirt and electrical insulation is clean & dry                                                                                                                             | d,e,m,n             | ✓        |       |        |
| 29.                                                                                                                        | Specific conditions of use (if applicable) are complied with                                                                                                                                                | d,e,m,n             | n/a      |       |        |
| 30.                                                                                                                        | Cables not in use are correctly terminated                                                                                                                                                                  | d,e,m,n             | n/a      |       |        |
| 31.                                                                                                                        | Obstructions adjacent to flameproof flanged joints are in accordance with IEC 60079-14 (IIA-10mm IIB-30mm IIC-40mm)                                                                                         | d,e,m,n             | n/a      |       |        |
| 32.                                                                                                                        | Equipment is adequately protected against corrosion, weather, vibration & other adverse factors                                                                                                             | d,e,m,n             | ✓        |       |        |



## 6. Light

### 6.1 Electrical Equipment Details Form

(Electrical Installation Inspection & Maintenance Conducted to BS EN 60079-17:2014)

|                       |           |                  |               |
|-----------------------|-----------|------------------|---------------|
| Equipment Description | Light     | Manufacturer     | Eaton         |
| Serial Number         | 0008872D2 | Type/Part Number | eLLK 92036/36 |
| Equipment ID          | -         |                  |               |

|                |         |                    |   |
|----------------|---------|--------------------|---|
| Voltage (V)    | 110-254 | Current Rating (A) | - |
| KW/HP          | -       | Wattage (W)        | - |
| AC/DC          | AC/DC   | RPM                | - |
| Frequency (Hz) | 50/60   | Frame              | - |

|                   |       |                         |              |
|-------------------|-------|-------------------------|--------------|
| EX Type           | de    | Certification Authority | BVS          |
| Class / Gas Group | IIC   | Certification Number    | 09 ATEX E034 |
| T Class           | T4    |                         |              |
| IP Rating         | 66/67 |                         |              |

| Record of Equipment Entries |          |                                  |
|-----------------------------|----------|----------------------------------|
| Entry Size                  | Quantity | Gland Type                       |
| M25                         | 1        | M25-M20 Reducer / 501/453 Univ O |
| M25                         | 3        | Exe Stopper                      |
|                             |          |                                  |
|                             |          |                                  |
|                             |          |                                  |
|                             |          |                                  |
|                             |          |                                  |

|                                                                                               |
|-----------------------------------------------------------------------------------------------|
| <b>Any other comments/general recommendations or observations should be documented below.</b> |
| Uncertified Reducer fitted. Also stoppers fitted to reducers so replaced for M25 stoppers     |

The signature below confirms that on the completion of this inspection, the security of panels have been checked, fixtures secured and bolts etc. have been correctly tightened in line with the manufacturers recommended settings.

|               |         |                      |                                                                                      |        |            |
|---------------|---------|----------------------|--------------------------------------------------------------------------------------|--------|------------|
| Inspected By: | R. Lang | Engineers Signature: |  | Date : | 05/09/2023 |
|---------------|---------|----------------------|--------------------------------------------------------------------------------------|--------|------------|

## 6.2 Ex Inspection Sheet

|                  |               |                         |                   |
|------------------|---------------|-------------------------|-------------------|
| Item Description | Light         | Protection Type         | de                |
| Model Number     | eLLK 92036/36 | Certification Number    | BVS 09 ATEX E 034 |
| Serial Number    | 0008872D2     | Gas Group/Temp Class/IP | IIC/T4/IP66-67    |

| <b>Inspection schedule for Ex d,e,m,n Installations.</b><br>Satisfactory ✓ Unsatisfactory x Repaired R Not Applicable n/a Other O |                                                                                                                                                                                                             | Grade of Inspection |          |       |        |
|-----------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|----------|-------|--------|
|                                                                                                                                   |                                                                                                                                                                                                             | EX Type             | Detailed | Close | Visual |
| <b>A</b>                                                                                                                          | <b>APPARATUS</b>                                                                                                                                                                                            |                     |          |       |        |
| 1.                                                                                                                                | Apparatus is appropriate to area classification. (EPL/Zone requirements)                                                                                                                                    | d,e,m,n             | O        |       |        |
| 2.                                                                                                                                | Apparatus group is correct.                                                                                                                                                                                 | d,e,m,n             | O        |       |        |
| 3.                                                                                                                                | Apparatus temperature class is correct. (Gas only)                                                                                                                                                          | d,e,m,n             | O        |       |        |
| 4.                                                                                                                                | Apparatus circuit identification is correct and available                                                                                                                                                   | d,e,m,n             | O        |       |        |
| 5.                                                                                                                                | Degree of protection (IP) of equipment is appropriate for the level of protection/group. (no sign of water or dust ingress)                                                                                 | d,e,m,n             | ✓        |       |        |
| 6.                                                                                                                                | Enclosure, glasses and glass to metal sealing gaskets and/or compounds are satisfactory.                                                                                                                    | d,e,m,n             | ✓        |       |        |
| 7.                                                                                                                                | There is no damage or evidence of unauthorised modifications                                                                                                                                                | d,e,m,n             | ✓        |       |        |
| 8.                                                                                                                                | Threaded covers on enclosures are of the correct type and they are tight and secure                                                                                                                         | d,e,m,n             | n/a      |       |        |
| 9.                                                                                                                                | Bolts, cable, entry devices (direct and indirect) and blanking elements are of the correct type and are complete and tight.                                                                                 | d,e,m,n             | R        |       |        |
| 10.                                                                                                                               | Joint surfaces are clean and undamaged and gaskets, if any, are satisfactory and positioned correctly and free from damage and defect                                                                       | d,e,m,n             | n/a      |       |        |
| 11.                                                                                                                               | Dimensions of flanged joint gaps are within the limits in accordance with manufacturers documentation and are within maximum values permitted by relevant construction standard at the time of installation | d,e,m,n             | n/a      |       |        |
| 12.                                                                                                                               | Electrical connections are tight and all unused terminals are tightened                                                                                                                                     | d,e,m,n             | ✓        |       |        |
| 13.                                                                                                                               | Enclosed-break & hermetically sealed devices are undamaged                                                                                                                                                  | d,e,m,n             | n/a      |       |        |
| 14.                                                                                                                               | Flameproof & encapsulated components are undamaged                                                                                                                                                          | d,m,n               | ✓        |       |        |
| 15.                                                                                                                               | Restricted breathing enclosure is satisfactory (type nR only)                                                                                                                                               | n                   | n/a      |       |        |
| 16.                                                                                                                               | Test port if fitted is functional (type nR only)                                                                                                                                                            | n                   | n/a      |       |        |
| 17.                                                                                                                               | Breathing operation is satisfactory (type nR only)                                                                                                                                                          | n                   | n/a      |       |        |
| 18.                                                                                                                               | Fluorescent, HID lamps show no EOL (end of life effects) & type, rating & pin configuration & position are correct                                                                                          | d,e,m,n             | ✓        |       |        |
| 19.                                                                                                                               | Motor fans have sufficient clearance to the enclosure and/or covers cooling systems are undamaged, motor foundations have no indentations or cracks & the ventilation airflow is not impeded                | d,e,m,n             | n/a      |       |        |
| 20.                                                                                                                               | The insulation resistance (IR) of the motor windings is satisfactory                                                                                                                                        | d,e,m,n             | n/a      |       |        |
| 21.                                                                                                                               | Type of cable is appropriate and free from obvious damage                                                                                                                                                   | d,e,m,n             | ✓        |       |        |
| 22.                                                                                                                               | Sealing of trunking, ducts, pipes and/or conduits is satisfactory                                                                                                                                           | d,e,m,n             | n/a      |       |        |
| 23.                                                                                                                               | Stopping boxes and cables boxes are correctly filled & integrity of conduit system and interface with mixed system is maintained                                                                            | d,e,m,n             | n/a      |       |        |
| 24.                                                                                                                               | Earthing connections, including any supplementary earth bonding connections are satisfactory (for example connections are tight and conductors are of sufficient CSA)                                       | d,e,m,n             | ✓        |       |        |
| 25.                                                                                                                               | Automatic electrical protective devices are set correctly (auto reset not possible)                                                                                                                         | d,e,m,n             | n/a      |       |        |
| 26.                                                                                                                               | Automatic electrical protective devices operate within permitted limits                                                                                                                                     | d,e,m,n             | n/a      |       |        |
| 27.                                                                                                                               | Variable voltage/frequency installation complies with documentation                                                                                                                                         | d,e,m,n             | n/a      |       |        |
| 28.                                                                                                                               | No undue accumulation of dust and dirt and electrical insulation is clean & dry                                                                                                                             | d,e,m,n             | ✓        |       |        |
| 29.                                                                                                                               | Specific conditions of use (if applicable) are complied with                                                                                                                                                | d,e,m,n             | n/a      |       |        |
| 30.                                                                                                                               | Cables not in use are correctly terminated                                                                                                                                                                  | d,e,m,n             | n/a      |       |        |
| 31.                                                                                                                               | Obstructions adjacent to flameproof flanged joints are in accordance with IEC 60079-14 (IIA-10mm IIB-30mm IIC-40mm)                                                                                         | d,e,m,n             | n/a      |       |        |
| 32.                                                                                                                               | Equipment is adequately protected against corrosion, weather, vibration & other adverse factors                                                                                                             | d,e,m,n             | ✓        |       |        |

## 7. 110v Socket

### 7.1 Electrical Equipment Details Form

(Electrical Installation Inspection & Maintenance Conducted to BS EN 60079-17:2014)

|                       |             |                  |                 |
|-----------------------|-------------|------------------|-----------------|
| Equipment Description | 110v Socket | Manufacturer     | CEAG            |
| Serial Number         | -           | Type/Part Number | GHG5114304R0002 |
| Equipment ID          | -           |                  |                 |

|                |     |                    |    |
|----------------|-----|--------------------|----|
| Voltage (V)    | 110 | Current Rating (A) | 16 |
| KW/HP          | -   | Wattage (W)        | -  |
| AC/DC          | AC  | RPM                | -  |
| Frequency (Hz) | -   | Frame              | -  |

|                   |     |                         |              |
|-------------------|-----|-------------------------|--------------|
| EX Type           | ed  | Certification Authority | PTB          |
| Class / Gas Group | IIC | Certification Number    | 99 ATEX 1039 |
| T Class           | T6  |                         |              |
| IP Rating         | 66  |                         |              |

| Record of Equipment Entries |          |                |
|-----------------------------|----------|----------------|
| Entry Size                  | Quantity | Gland Type     |
| M20                         | 1        | 501/453 Univ O |
| M20                         | 1        | Exe Stopper    |
|                             |          |                |
|                             |          |                |
|                             |          |                |
|                             |          |                |
|                             |          |                |

|                                                                                        |
|----------------------------------------------------------------------------------------|
| Any other comments/general recommendations or observations should be documented below. |
|                                                                                        |

The signature below confirms that on the completion of this inspection, the security of panels have been checked, fixtures secured and bolts etc. have been correctly tightened in line with the manufacturers recommended settings.

|               |         |                      |                                                                                      |        |            |
|---------------|---------|----------------------|--------------------------------------------------------------------------------------|--------|------------|
| Inspected By: | R. Lang | Engineers Signature: |  | Date : | 05/09/2023 |
|---------------|---------|----------------------|--------------------------------------------------------------------------------------|--------|------------|



## 7.2 Ex Inspection Sheet

|                  |                 |                         |                  |
|------------------|-----------------|-------------------------|------------------|
| Item Description | 110v Socket     | Protection Type         | ed               |
| Model Number     | GHG5114304R0002 | Certification Number    | PTB 99 ATEX 1039 |
| Serial Number    | -               | Gas Group/Temp Class/IP | IIC/T6/IP66      |

| Inspection schedule for Ex d,e,m,n Installations.<br>Satisfactory ✓ Unsatisfactory x Repaired R Not Applicable n/a Other O |                                                                                                                                                                                                             | Grade of Inspection |          |       |        |
|----------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|----------|-------|--------|
|                                                                                                                            |                                                                                                                                                                                                             | EX Type             | Detailed | Close | Visual |
| A                                                                                                                          | APPARATUS                                                                                                                                                                                                   |                     |          |       |        |
| 1.                                                                                                                         | Apparatus is appropriate to area classification. (EPL/Zone requirements)                                                                                                                                    | d,e,m,n             | O        |       |        |
| 2.                                                                                                                         | Apparatus group is correct.                                                                                                                                                                                 | d,e,m,n             | O        |       |        |
| 3.                                                                                                                         | Apparatus temperature class is correct. (Gas only)                                                                                                                                                          | d,e,m,n             | O        |       |        |
| 4.                                                                                                                         | Apparatus circuit identification is correct and available                                                                                                                                                   | d,e,m,n             | O        |       |        |
| 5.                                                                                                                         | Degree of protection (IP) of equipment is appropriate for the level of protection/group. (no sign of water or dust ingress)                                                                                 | d,e,m,n             | ✓        |       |        |
| 6.                                                                                                                         | Enclosure, glasses and glass to metal sealing gaskets and/or compounds are satisfactory.                                                                                                                    | d,e,m,n             | ✓        |       |        |
| 7.                                                                                                                         | There is no damage or evidence of unauthorised modifications                                                                                                                                                | d,e,m,n             | ✓        |       |        |
| 8.                                                                                                                         | Threaded covers on enclosures are of the correct type and they are tight and secure                                                                                                                         | d,e,m,n             | n/a      |       |        |
| 9.                                                                                                                         | Bolts, cable, entry devices (direct and indirect) and blanking elements are of the correct type and are complete and tight.                                                                                 | d,e,m,n             | ✓        |       |        |
| 10.                                                                                                                        | Joint surfaces are clean and undamaged and gaskets, if any, are satisfactory and positioned correctly and free from damage and defect                                                                       | d,e,m,n             | n/a      |       |        |
| 11.                                                                                                                        | Dimensions of flanged joint gaps are within the limits in accordance with manufacturers documentation and are within maximum values permitted by relevant construction standard at the time of installation | d,e,m,n             | n/a      |       |        |
| 12.                                                                                                                        | Electrical connections are tight and all unused terminals are tightened                                                                                                                                     | d,e,m,n             | ✓        |       |        |
| 13.                                                                                                                        | Enclosed-break & hermetically sealed devices are undamaged                                                                                                                                                  | d,e,m,n             | n/a      |       |        |
| 14.                                                                                                                        | Flameproof & encapsulated components are undamaged                                                                                                                                                          | d,m,n               | ✓        |       |        |
| 15.                                                                                                                        | Restricted breathing enclosure is satisfactory (type nR only)                                                                                                                                               | n                   | n/a      |       |        |
| 16.                                                                                                                        | Test port if fitted is functional (type nR only)                                                                                                                                                            | n                   | n/a      |       |        |
| 17.                                                                                                                        | Breathing operation is satisfactory (type nR only)                                                                                                                                                          | n                   | n/a      |       |        |
| 18.                                                                                                                        | Fluorescent, HID lamps show no EOL (end of life effects) & type, rating & pin configuration & position are correct                                                                                          | d,e,m,n             | n/a      |       |        |
| 19.                                                                                                                        | Motor fans have sufficient clearance to the enclosure and/or covers cooling systems are undamaged, motor foundations have no indentations or cracks & the ventilation airflow is not impeded                | d,e,m,n             | n/a      |       |        |
| 20.                                                                                                                        | The insulation resistance (IR) of the motor windings is satisfactory                                                                                                                                        | d,e,m,n             | n/a      |       |        |
| 21.                                                                                                                        | Type of cable is appropriate and free from obvious damage                                                                                                                                                   | d,e,m,n             | ✓        |       |        |
| 22.                                                                                                                        | Sealing of trunking, ducts, pipes and/or conduits is satisfactory                                                                                                                                           | d,e,m,n             | n/a      |       |        |
| 23.                                                                                                                        | Stopping boxes and cables boxes are correctly filled & integrity of conduit system and interface with mixed system is maintained                                                                            | d,e,m,n             | n/a      |       |        |
| 24.                                                                                                                        | Earthing connections, including any supplementary earth bonding connections are satisfactory (for example connections are tight and conductors are of sufficient CSA)                                       | d,e,m,n             | ✓        |       |        |
| 25.                                                                                                                        | Automatic electrical protective devices are set correctly (auto reset not possible)                                                                                                                         | d,e,m,n             | n/a      |       |        |
| 26.                                                                                                                        | Automatic electrical protective devices operate within permitted limits                                                                                                                                     | d,e,m,n             | n/a      |       |        |
| 27.                                                                                                                        | Variable voltage/frequency installation complies with documentation                                                                                                                                         | d,e,m,n             | n/a      |       |        |
| 28.                                                                                                                        | No undue accumulation of dust and dirt and electrical insulation is clean & dry                                                                                                                             | d,e,m,n             | ✓        |       |        |
| 29.                                                                                                                        | Specific conditions of use (if applicable) are complied with                                                                                                                                                | d,e,m,n             | n/a      |       |        |
| 30.                                                                                                                        | Cables not in use are correctly terminated                                                                                                                                                                  | d,e,m,n             | n/a      |       |        |
| 31.                                                                                                                        | Obstructions adjacent to flameproof flanged joints are in accordance with IEC 60079-14 (IIA-10mm IIB-30mm IIC-40mm)                                                                                         | d,e,m,n             | n/a      |       |        |
| 32.                                                                                                                        | Equipment is adequately protected against corrosion, weather, vibration & other adverse factors                                                                                                             | d,e,m,n             | ✓        |       |        |



## 8. Heater

### 8.1 Electrical Equipment Details Form

(Electrical Installation Inspection & Maintenance Conducted to BS EN 60079-17:2014)

|                       |        |                  |            |
|-----------------------|--------|------------------|------------|
| Equipment Description | Heater | Manufacturer     | Ex Heat    |
| Serial Number         | 063611 | Type/Part Number | FAW Heater |
| Equipment ID          | -      |                  |            |

|                |     |                    |     |
|----------------|-----|--------------------|-----|
| Voltage (V)    | 110 | Current Rating (A) | 9.1 |
| KW/HP          | 1   | Wattage (W)        | -   |
| AC/DC          | AC  | RPM                | -   |
| Frequency (Hz) | -   | Frame              | -   |

|                   |    |                         |               |
|-------------------|----|-------------------------|---------------|
| EX Type           | e  | Certification Authority | LCIE          |
| Class / Gas Group | II | Certification Number    | 00 ATEX 6013X |
| T Class           | T3 |                         |               |
| IP Rating         | -  |                         |               |

| Record of Equipment Entries |          |                |
|-----------------------------|----------|----------------|
| Entry Size                  | Quantity | Gland Type     |
| M20                         | 1        | 501/453 Univ O |
|                             |          |                |
|                             |          |                |
|                             |          |                |
|                             |          |                |
|                             |          |                |
|                             |          |                |

| Any other comments/general recommendations or observations should be documented below. |
|----------------------------------------------------------------------------------------|
| 12.1 ohms<br>75 MOhms to Earth                                                         |

The signature below confirms that on the completion of this inspection, the security of panels have been checked, fixtures secured and bolts etc. have been correctly tightened in line with the manufacturers recommended settings.

|               |         |                      |                                                                                      |        |            |
|---------------|---------|----------------------|--------------------------------------------------------------------------------------|--------|------------|
| Inspected By: | R. Lang | Engineers Signature: |  | Date : | 05/09/2023 |
|---------------|---------|----------------------|--------------------------------------------------------------------------------------|--------|------------|

## 8.2 Ex Inspection Sheet

|                  |            |                         |                    |
|------------------|------------|-------------------------|--------------------|
| Item Description | Heater     | Protection Type         | e                  |
| Model Number     | FAW Heater | Certification Number    | LCIE 00 ATEX 6013X |
| Serial Number    | 063611     | Gas Group/Temp Class/IP | II/T3/na           |

| Inspection schedule for Ex d,e,m,n Installations.<br>Satisfactory ✓ Unsatisfactory x Repaired R Not Applicable n/a Other O |                                                                                                                                                                                                             | Grade of Inspection |          |       |        |
|----------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|----------|-------|--------|
|                                                                                                                            |                                                                                                                                                                                                             | EX Type             | Detailed | Close | Visual |
| <b>A</b>                                                                                                                   | <b>APPARATUS</b>                                                                                                                                                                                            |                     |          |       |        |
| 1.                                                                                                                         | Apparatus is appropriate to area classification. (EPL/Zone requirements)                                                                                                                                    | d,e,m,n             | O        |       |        |
| 2.                                                                                                                         | Apparatus group is correct.                                                                                                                                                                                 | d,e,m,n             | O        |       |        |
| 3.                                                                                                                         | Apparatus temperature class is correct. (Gas only)                                                                                                                                                          | d,e,m,n             | O        |       |        |
| 4.                                                                                                                         | Apparatus circuit identification is correct and available                                                                                                                                                   | d,e,m,n             | O        |       |        |
| 5.                                                                                                                         | Degree of protection (IP) of equipment is appropriate for the level of protection/group. (no sign of water or dust ingress)                                                                                 | d,e,m,n             | ✓        |       |        |
| 6.                                                                                                                         | Enclosure, glasses and glass to metal sealing gaskets and/or compounds are satisfactory.                                                                                                                    | d,e,m,n             | ✓        |       |        |
| 7.                                                                                                                         | There is no damage or evidence of unauthorised modifications                                                                                                                                                | d,e,m,n             | ✓        |       |        |
| 8.                                                                                                                         | Threaded covers on enclosures are of the correct type and they are tight and secure                                                                                                                         | d,e,m,n             | n/a      |       |        |
| 9.                                                                                                                         | Bolts, cable, entry devices (direct and indirect) and blanking elements are of the correct type and are complete and tight.                                                                                 | d,e,m,n             | ✓        |       |        |
| 10.                                                                                                                        | Joint surfaces are clean and undamaged and gaskets, if any, are satisfactory and positioned correctly and free from damage and defect                                                                       | d,e,m,n             | n/a      |       |        |
| 11.                                                                                                                        | Dimensions of flanged joint gaps are within the limits in accordance with manufacturers documentation and are within maximum values permitted by relevant construction standard at the time of installation | d,e,m,n             | n/a      |       |        |
| 12.                                                                                                                        | Electrical connections are tight and all unused terminals are tightened                                                                                                                                     | d,e,m,n             | ✓        |       |        |
| 13.                                                                                                                        | Enclosed-break & hermetically sealed devices are undamaged                                                                                                                                                  | d,e,m,n             | n/a      |       |        |
| 14.                                                                                                                        | Flameproof & encapsulated components are undamaged                                                                                                                                                          | d,m,n               | n/a      |       |        |
| 15.                                                                                                                        | Restricted breathing enclosure is satisfactory (type nR only)                                                                                                                                               | n                   | n/a      |       |        |
| 16.                                                                                                                        | Test port if fitted is functional (type nR only)                                                                                                                                                            | n                   | n/a      |       |        |
| 17.                                                                                                                        | Breathing operation is satisfactory (type nR only)                                                                                                                                                          | n                   | n/a      |       |        |
| 18.                                                                                                                        | Fluorescent, HID lamps show no EOL (end of life effects) & type, rating & pin configuration & position are correct                                                                                          | d,e,m,n             | n/a      |       |        |
| 19.                                                                                                                        | Motor fans have sufficient clearance to the enclosure and/or covers cooling systems are undamaged, motor foundations have no indentations or cracks & the ventilation airflow is not impeded                | d,e,m,n             | n/a      |       |        |
| 20.                                                                                                                        | The insulation resistance (IR) of the motor windings is satisfactory                                                                                                                                        | d,e,m,n             | n/a      |       |        |
| 21.                                                                                                                        | Type of cable is appropriate and free from obvious damage                                                                                                                                                   | d,e,m,n             | ✓        |       |        |
| 22.                                                                                                                        | Sealing of trunking, ducts, pipes and/or conduits is satisfactory                                                                                                                                           | d,e,m,n             | n/a      |       |        |
| 23.                                                                                                                        | Stopping boxes and cables boxes are correctly filled & integrity of conduit system and interface with mixed system is maintained                                                                            | d,e,m,n             | n/a      |       |        |
| 24.                                                                                                                        | Earthing connections, including any supplementary earth bonding connections are satisfactory (for example connections are tight and conductors are of sufficient CSA)                                       | d,e,m,n             | ✓        |       |        |
| 25.                                                                                                                        | Automatic electrical protective devices are set correctly (auto reset not possible)                                                                                                                         | d,e,m,n             | n/a      |       |        |
| 26.                                                                                                                        | Automatic electrical protective devices operate within permitted limits                                                                                                                                     | d,e,m,n             | n/a      |       |        |
| 27.                                                                                                                        | Variable voltage/frequency installation complies with documentation                                                                                                                                         | d,e,m,n             | n/a      |       |        |
| 28.                                                                                                                        | No undue accumulation of dust and dirt and electrical insulation is clean & dry                                                                                                                             | d,e,m,n             | ✓        |       |        |
| 29.                                                                                                                        | Specific conditions of use (if applicable) are complied with                                                                                                                                                | d,e,m,n             | ✓        |       |        |
| 30.                                                                                                                        | Cables not in use are correctly terminated                                                                                                                                                                  | d,e,m,n             | n/a      |       |        |
| 31.                                                                                                                        | Obstructions adjacent to flameproof flanged joints are in accordance with IEC 60079-14 (IIA-10mm IIB-30mm IIC-40mm)                                                                                         | d,e,m,n             | n/a      |       |        |
| 32.                                                                                                                        | Equipment is adequately protected against corrosion, weather, vibration & other adverse factors                                                                                                             | d,e,m,n             | ✓        |       |        |

## 9. Heater Plug

### 9.1 Electrical Equipment Details Form

(Electrical Installation Inspection & Maintenance Conducted to BS EN 60079-17:2014)

|                              |             |                         |                 |
|------------------------------|-------------|-------------------------|-----------------|
| <b>Equipment Description</b> | Heater Plug | <b>Manufacturer</b>     | Eaton           |
| <b>Serial Number</b>         | 2183610     | <b>Type/Part Number</b> | GHG5117304R0001 |
| <b>Equipment ID</b>          | -           |                         |                 |

|                       |     |                           |    |
|-----------------------|-----|---------------------------|----|
| <b>Voltage (V)</b>    | 130 | <b>Current Rating (A)</b> | 16 |
| <b>KW/HP</b>          | -   | <b>Wattage (W)</b>        | -  |
| <b>AC/DC</b>          | AC  | <b>RPM</b>                | -  |
| <b>Frequency (Hz)</b> | -   | <b>Frame</b>              | -  |

|                          |       |                                |                |
|--------------------------|-------|--------------------------------|----------------|
| <b>EX Type</b>           | db eb | <b>Certification Authority</b> | BVS            |
| <b>Class / Gas Group</b> | IIC   | <b>Certification Number</b>    | 17 ATEX E 053X |
| <b>T Class</b>           | T6    |                                |                |
| <b>IP Rating</b>         | 66    |                                |                |

| Record of Equipment Entries |          |             |
|-----------------------------|----------|-------------|
| Entry Size                  | Quantity | Gland Type  |
|                             | 1        | Compression |
|                             |          |             |
|                             |          |             |
|                             |          |             |
|                             |          |             |
|                             |          |             |
|                             |          |             |
|                             |          |             |

|                                                                                               |
|-----------------------------------------------------------------------------------------------|
| <b>Any other comments/general recommendations or observations should be documented below.</b> |
| Fitted new cable to plug and connected into heater.                                           |

The signature below confirms that on the completion of this inspection, the security of panels have been checked, fixtures secured and bolts etc. have been correctly tightened in line with the manufacturers recommended settings.

|                      |         |                             |                                                                                      |               |            |
|----------------------|---------|-----------------------------|--------------------------------------------------------------------------------------|---------------|------------|
| <b>Inspected By:</b> | R. Lang | <b>Engineers Signature:</b> |  | <b>Date :</b> | 05/09/2023 |
|----------------------|---------|-----------------------------|--------------------------------------------------------------------------------------|---------------|------------|



## 9.2 Ex Inspection Sheet

|                  |                 |                         |                    |
|------------------|-----------------|-------------------------|--------------------|
| Item Description | Heater Plug     | Protection Type         | db eb              |
| Model Number     | GHG5117304R0001 | Certification Number    | BVS 17 ATEX E 053X |
| Serial Number    | 2183610         | Gas Group/Temp Class/IP | IIC/T6/IP66        |

| Inspection schedule for Ex d,e,m,n Installations.<br>Satisfactory ✓ Unsatisfactory x Repaired R Not Applicable n/a Other O |                                                                                                                                                                                                             | Grade of Inspection |          |       |        |
|----------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|----------|-------|--------|
|                                                                                                                            |                                                                                                                                                                                                             | EX Type             | Detailed | Close | Visual |
| <b>A</b>                                                                                                                   | <b>APPARATUS</b>                                                                                                                                                                                            |                     |          |       |        |
| 1.                                                                                                                         | Apparatus is appropriate to area classification. (EPL/Zone requirements)                                                                                                                                    | d,e,m,n             | O        |       |        |
| 2.                                                                                                                         | Apparatus group is correct.                                                                                                                                                                                 | d,e,m,n             | O        |       |        |
| 3.                                                                                                                         | Apparatus temperature class is correct. (Gas only)                                                                                                                                                          | d,e,m,n             | O        |       |        |
| 4.                                                                                                                         | Apparatus circuit identification is correct and available                                                                                                                                                   | d,e,m,n             | O        |       |        |
| 5.                                                                                                                         | Degree of protection (IP) of equipment is appropriate for the level of protection/group. (no sign of water or dust ingress)                                                                                 | d,e,m,n             | ✓        |       |        |
| 6.                                                                                                                         | Enclosure, glasses and glass to metal sealing gaskets and/or compounds are satisfactory.                                                                                                                    | d,e,m,n             | ✓        |       |        |
| 7.                                                                                                                         | There is no damage or evidence of unauthorised modifications                                                                                                                                                | d,e,m,n             | ✓        |       |        |
| 8.                                                                                                                         | Threaded covers on enclosures are of the correct type and they are tight and secure                                                                                                                         | d,e,m,n             | n/a      |       |        |
| 9.                                                                                                                         | Bolts, cable, entry devices (direct and indirect) and blanking elements are of the correct type and are complete and tight.                                                                                 | d,e,m,n             | ✓        |       |        |
| 10.                                                                                                                        | Joint surfaces are clean and undamaged and gaskets, if any, are satisfactory and positioned correctly and free from damage and defect                                                                       | d,e,m,n             | n/a      |       |        |
| 11.                                                                                                                        | Dimensions of flanged joint gaps are within the limits in accordance with manufacturers documentation and are within maximum values permitted by relevant construction standard at the time of installation | d,e,m,n             | n/a      |       |        |
| 12.                                                                                                                        | Electrical connections are tight and all unused terminals are tightened                                                                                                                                     | d,e,m,n             | ✓        |       |        |
| 13.                                                                                                                        | Enclosed-break & hermetically sealed devices are undamaged                                                                                                                                                  | d,e,m,n             | n/a      |       |        |
| 14.                                                                                                                        | Flameproof & encapsulated components are undamaged                                                                                                                                                          | d,m,n               | ✓        |       |        |
| 15.                                                                                                                        | Restricted breathing enclosure is satisfactory (type nR only)                                                                                                                                               | n                   | n/a      |       |        |
| 16.                                                                                                                        | Test port if fitted is functional (type nR only)                                                                                                                                                            | n                   | n/a      |       |        |
| 17.                                                                                                                        | Breathing operation is satisfactory (type nR only)                                                                                                                                                          | n                   | n/a      |       |        |
| 18.                                                                                                                        | Fluorescent, HID lamps show no EOL (end of life effects) & type, rating & pin configuration & position are correct                                                                                          | d,e,m,n             | n/a      |       |        |
| 19.                                                                                                                        | Motor fans have sufficient clearance to the enclosure and/or covers cooling systems are undamaged, motor foundations have no indentations or cracks & the ventilation airflow is not impeded                | d,e,m,n             | n/a      |       |        |
| 20.                                                                                                                        | The insulation resistance (IR) of the motor windings is satisfactory                                                                                                                                        | d,e,m,n             | n/a      |       |        |
| 21.                                                                                                                        | Type of cable is appropriate and free from obvious damage                                                                                                                                                   | d,e,m,n             | ✓        |       |        |
| 22.                                                                                                                        | Sealing of trunking, ducts, pipes and/or conduits is satisfactory                                                                                                                                           | d,e,m,n             | n/a      |       |        |
| 23.                                                                                                                        | Stopping boxes and cables boxes are correctly filled & integrity of conduit system and interface with mixed system is maintained                                                                            | d,e,m,n             | n/a      |       |        |
| 24.                                                                                                                        | Earthing connections, including any supplementary earth bonding connections are satisfactory (for example connections are tight and conductors are of sufficient CSA)                                       | d,e,m,n             | ✓        |       |        |
| 25.                                                                                                                        | Automatic electrical protective devices are set correctly (auto reset not possible)                                                                                                                         | d,e,m,n             | n/a      |       |        |
| 26.                                                                                                                        | Automatic electrical protective devices operate within permitted limits                                                                                                                                     | d,e,m,n             | n/a      |       |        |
| 27.                                                                                                                        | Variable voltage/frequency installation complies with documentation                                                                                                                                         | d,e,m,n             | n/a      |       |        |
| 28.                                                                                                                        | No undue accumulation of dust and dirt and electrical insulation is clean & dry                                                                                                                             | d,e,m,n             | ✓        |       |        |
| 29.                                                                                                                        | Specific conditions of use (if applicable) are complied with                                                                                                                                                | d,e,m,n             | ✓        |       |        |
| 30.                                                                                                                        | Cables not in use are correctly terminated                                                                                                                                                                  | d,e,m,n             | n/a      |       |        |
| 31.                                                                                                                        | Obstructions adjacent to flameproof flanged joints are in accordance with IEC 60079-14 (IIA-10mm IIB-30mm IIC-40mm)                                                                                         | d,e,m,n             | n/a      |       |        |
| 32.                                                                                                                        | Equipment is adequately protected against corrosion, weather, vibration & other adverse factors                                                                                                             | d,e,m,n             | ✓        |       |        |



## 10. Declaration

I, being the person responsible for the inspection and testing of the electrical installation/apparatus (as indicated by my signature below), having exercised reasonable skill and care when carrying out the inspection and testing, hereby declare that the information in this report, including any observations and the attached test sheets provides an accurate assessment of the condition of the hazardous area installation/apparatus taking into account any limitations that are stated.

We certify that above results were obtained at the time of test. Any adjustments or alterations by others after the inspection, may result in the protection becoming unsatisfactory.

Tested By: Ronan Lang

Signed: 

Approved by: Robert Laidlaw

Date: 05/09/2023

## Hazardous Area Equipment Schedule

|                   |                |                           |           |                           |             |
|-------------------|----------------|---------------------------|-----------|---------------------------|-------------|
| <b>Customer:</b>  | Blue Manta     | <b>Equipment ID:</b>      | EL-0152   | <b>Quartzelec Job No:</b> | 1094865-100 |
| <b>Attention:</b> | Fraser Barclay | <b>Equip Description:</b> | Container |                           |             |

| Item | Qty | Component Description | Part No             | Item Serial No | Manufacturer | Certification body | Certificate No | Type of Protection | Gas Group | Temp Class | IP Rating |
|------|-----|-----------------------|---------------------|----------------|--------------|--------------------|----------------|--------------------|-----------|------------|-----------|
| 1    | 1   | 110V Plug             | GHG51173<br>04R0001 | -              | CEAG         | PTB                | 99 ATEX 1039   | de                 | IIC       | T6         | 66        |
| 2    | 1   | Junction Box          | OTB-<br>122/06      | 01-002909      | Bartec       | BAS                | 98 ATEX 3008X  | e                  | II        | T6         | 66        |
| 3    | 1   | MCB Enclosure         | EJB 12A             | 13273-1        | PDC Systems  | LOM                | 03 ATEX 2046X  | d                  | IIB       | T6         | 65        |
| 4    | 1   | Light Switch          | GHG27320<br>00R0003 | -              | CEAG         | PTB                | 98 ATEX 3121   | ed                 | IIC       | T6         | 66        |
| 5    | 1   | Light                 | eLLK<br>92036/36    | 0008872D2      | Eaton        | BVS                | 09 ATEX E034   | de                 | IIC       | T4         | 66/67     |
| 6    | 1   | 110v Socket           | GHG51143<br>04R0002 | -              | CEAG         | PTB                | 99 ATEX 1039   | ed                 | IIC       | T6         | 66        |
| 7    | 1   | Heater                | FAW<br>Heater       | 063611         | Ex Heat      | LCIE               | 00 ATEX 6013X  | e                  | II        | T3         | -         |
| 8    | 1   | Heater Plug           | GHG51173<br>04R0001 | 2183610        | Eaton        | BVS                | 17 ATEX E 053X | db eb              | IIC       | T6         | 66        |

|                      |                                                                                     |  |  |                |
|----------------------|-------------------------------------------------------------------------------------|--|--|----------------|
| Inspected By :       | R. Lang                                                                             |  |  |                |
| Engineers Signature: |  |  |  | Date: 05/09/23 |

## Cable Test Form

|                           |                |
|---------------------------|----------------|
| <b>Customer:</b>          | Blue Manta     |
| <b>Attention:</b>         | Fraser Barclay |
| <b>Equipment ID:</b>      | EL-0152        |
| <b>Quartzelec Job No:</b> | 1094865-100    |

| Test Instrument Description | Test Instrument Asset Number | Test Instrument Calibration Date |
|-----------------------------|------------------------------|----------------------------------|
| Fluke 175                   | MA-E-072                     | July 2024                        |
| Megger MIT410               | MM-E-084                     | September 2023                   |

| Cable ID | Cable Type   | Cable Size | No of Cores | Point to Point Check ( $\Omega$ ) | Test Voltage | IR (M $\Omega$ ) Core to Core (Lowest Result) | IR (M $\Omega$ ) Core to Earth | Cable Length (m) |
|----------|--------------|------------|-------------|-----------------------------------|--------------|-----------------------------------------------|--------------------------------|------------------|
| 001      | Marine Braid | 2.5        | 3           | 0.5                               | 500          | >1000                                         | >1000                          | 8                |
| 002      | Marine Braid | 2.5        | 3           | 0.5                               | 500          | >1000                                         | >1000                          | 1                |
| 003      | Marine Braid | 2.5        | 3           | 0.3                               | 500          | >1000                                         | >1000                          | 4                |
| 004      | Marine Braid | 2.5        | 3           | 0.2                               | 500          | >1000                                         | >1000                          | 1                |
| 005      | Marine Braid | 2.5        | 3           | 0.3                               | 500          | >1000                                         | >1000                          | 3                |
| 006      | Marine Braid | 2.5        | 3           | 0.2                               | 500          | n/a                                           | 75                             | 2                |

## General Comments

|                             |                                                                                     |              |            |
|-----------------------------|-------------------------------------------------------------------------------------|--------------|------------|
| <b>Inspected By :</b>       | R. Lang                                                                             | <b>Date:</b> | 05/09/2023 |
| <b>Engineers Signature:</b> |  |              |            |

# Cable Certificates



## TEST REPORT n° 666/14 05/12/2014

**Customer's Ref.** John Maclean & Sons **Order n°** KP0458413 **date** 20/08/14  
**Our/Ref n°** 2020072956 / 40, 50 **OF.n°** 80922633 **Product n°** 42968  
**Cable Type** RG50M2AM2 0.6/1 kV 3x2.5 mm<sup>2</sup> m. 10098  
 CU/EPR/EVA/GSWB/EVA  
**Standards/Spec.** BS 6883-1999, UKOOA, Spec. Order

### Cable description 600/1000 V

Tinned stranded copper conductor (Class 2 BS 6360)  
 EPR insulation (GP4 type)  
 EVA inner sheath (SW4 type)  
 Galvanized Steel Wire Braid  
 Black EVA outer sheath (SW4 type)

| ROUTINE TESTS Tests on complete cable |          | u.m.   | Required  | Result   |
|---------------------------------------|----------|--------|-----------|----------|
| Quantity lot cable                    |          | Metres | 10000     | 10098    |
| Voltage Tests a.c. 50 Hz              |          | kVxt'  | 3.5 x 5   | positive |
| Insulation resistance cores           | at 20° C | MΩxkm  | ≥ 617     | 2836     |
| Electrical resistance conductor       | at 20° C | Ω/km   | ≤ 7.56    | 7.370    |
| Average thickness of insulation       |          | mm     | ≥ 0.80    | 0.85     |
| Average thickness of inner sheath     |          | mm     | ≥ 1.1     | 1.18     |
| Diameter over inner sheath            |          | mm     | 9.2+11.2  | 10.1     |
| Armour wire nominal diameter          |          | mm     | 0.30      | 0.30     |
| Average thickness of outer sheath     |          | mm     | ≥ 1.3     | 1.59     |
| Overall diameter                      |          | mm     | 13.6+15.6 | 14.6     |

|                                           |                       |                |        |
|-------------------------------------------|-----------------------|----------------|--------|
| <b>Performances &amp; Characteristics</b> | Flame Retardant Cable | IEC 60332-3-22 | Comply |
|                                           | Oxygen Index          | min 32%        | Comply |
|                                           | HCl emission at 800°C | max 0.50%      | Comply |

### Marking:

PRYSMIAN (P) SW4 3x2.5 mm<sup>2</sup> 600/1000 V BS 6883 - IEC 60332-3-22 UKOOA WB303 - year - meters

| Reels  | B08414 | B28489 | C68355 | D70246 |  |  |  |  |  |  |
|--------|--------|--------|--------|--------|--|--|--|--|--|--|
| meters | 3018   | 3030   | 3050   | 1000   |  |  |  |  |  |  |

### Statement of Compliance (UNI CEI EN 17050-1)

We hereby declare that the material described above is conform with the requirements of specifications and terms of order.

MOD/PA/SLPC/21 Ed.1 Rev.1 del 02/07/01

Lab & Testing Dept.

Prysmian Cavi e Sistemi Italia s.r.l.  
 Stabilimento di MERLINO  
 Laboratory & Testing  
 (Paolo Campana)



Prysmian Cavi e Sistemi Italia s.r.l.

Sede Legale  
 Viale Sarca, 222 / 20126 Milano  
 Tel +39 02 6449.1  
 www.prysmian.it

Partita IVA 13275350158  
 Registro delle Imprese di Milano  
 e Codice Fiscale 04963770013

R.E.A. di Milano 1633012  
 Capitale Sociale € 77.143.249 i.v.  
 Direzione e coordinamento di Prysmian S.p.A.



Noskab Cables  
Peterseat Park  
Peterseat Drive, Allens  
Aberdeen AB12 3MT  
UNITED KINGDOM  
Tel +44 (0)1224 854100  
Fax +44 (0)1224 854104

A DISTRIBUTION **NOW** COMPANY

|                                               |                                                                                |                       |             |
|-----------------------------------------------|--------------------------------------------------------------------------------|-----------------------|-------------|
| CLIENT:                                       |                                                                                | OUR REF:              | KS045829/1  |
| CLIENT PO:                                    | <i>Blue Mark International</i>                                                 | DRUM NO:              | 1600-00700A |
| CLIENT PRODUCT CODE:                          | E0503C2.5BAABK4                                                                | SPECIAL INSTRUCTIONS: |             |
| QUANTITY:                                     | 200                                                                            | DELIVERY ADDRESS      |             |
| WEIGHT:                                       | DESCRIPTION<br>Cable 3 Cr 2.5mm <sup>2</sup> EPR, SW4, GSWB, SW4<br>BK 0.6/1kV |                       |             |
| FOR DRUM RETURNS PLEASE CONTACT ABOVE ADDRESS |                                                                                | 15/12/15              |             |



**Noskab Cables**



A DISTRIBUTION **NOW** COMPANY

Noskab Cables  
Peterseat Park  
Peterseat Drive, Altons  
Aberdeen AB12 3HT  
UNITED KINGDOM  
Tel +44 (0)1224 854100  
Fax +44 (0)1224 854104

|                                           |                                                                 |                       |             |
|-------------------------------------------|-----------------------------------------------------------------|-----------------------|-------------|
| CLIENT:                                   |                                                                 | OUR REF:              | KS045138/1  |
| CLIENT PO:                                | Blue Manla Int<br>00000021944                                   | DRUM NO:              | 1200-03642A |
| CLIENT<br>PRODUCT CODE:                   | E0401C006BAAGY4                                                 | SPECIAL INSTRUCTIONS: |             |
| QUANTITY:                                 | 100                                                             | DELIVERY ADDRESS      |             |
| WEIGHT:                                   | DESCRIPTION<br>Cable 1 Cr 6mm <sup>2</sup> EPR, SW4 G/Y 0.6/1kV |                       |             |
| DRUM RETURNS PLEASE CONTACT ABOVE ADDRESS |                                                                 | 2/9/15                |             |



**Noskab Cables**

# Cable Glands





## EC - TYPE EXAMINATION CERTIFICATE

### Equipment or Protective System Intended for use in Potentially Explosive Atmospheres Directive 94/9/EC

- 1
- 2
- 3 EC - Type Examination Certificate Number: **Baseefa06ATEX0056X**
- 4 Equipment or Protective System: **A Range of Cable Glands with Compression Type Seals**
- 5 Manufacturer: **Hawke International**
- 6 Address: **Oxford Street West, Ashton-under-Lyne, Lancashire, OL7 0NA**
- 7 This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.
- 8 Baseefa (2001) Ltd., Notified Body number 1180, in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive.
- The examination and test results are recorded in confidential Report No. **GB/BAS/ExTR 06.0011/00**
- 9 Compliance with the Essential Health and Safety Requirements has been assured by compliance with:  
**EN60079-0: 2004, EN60079-1: 2004, EN60079-7: 2003 + Amendment 1, IEC61241-0: 2004, IEC61241-1: 2004**  
except in respect of those requirements listed at item 18 of the Schedule.
- 10 If the sign "X" is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.
- 11 This EC - TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified equipment or protective system. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.
- 12 The marking of the equipment or protective system shall include the following :

 **II 2GD Ex d IIC Ex e II Ex tD A21 IP66 (- 60°C ≤ ta ≤ + 80°C [or +100°C see Special Conditions])**

This certificate may only be reproduced in its entirety, without any change, schedule included.

Baseefa Customer Reference No. **0500**

Project File No. **04/0381**

This certificate is granted subject to the general terms and conditions of Baseefa (2001) Ltd. It does not necessarily indicate that the equipment may be used in particular industries or circumstances.

### Baseefa

Rockhead Business Park, Staden Lane,  
Buxton, Derbyshire SK17 9RZ  
Telephone +44 (0) 1298 766600 Fax +44 (0) 1298 766601  
e-mail [info@baseefa.com](mailto:info@baseefa.com) web site [www.baseefa.com](http://www.baseefa.com)  
Baseefa is a trading name of Baseefa (2001) Ltd  
Registered in England No. 4305578 at the above address

R S SINCLAIR

DIRECTOR  
On behalf of  
Baseefa (2001) Ltd.



13

## Schedule

14

Certificate Number Baseefa06ATEX0056X

15

### Description of Equipment or Protective System

Each of the following gland types may be manufactured in brass, stainless steel or aluminium and may be supplied with agreed alternative entry thread forms.

#### Variant 0.1 TYPE 501/421 CABLE GLAND

The Type 501/421 Cable Gland is intended for use with an effectively filled and circular unarmoured cable and comprises the following components :-

- a. An entry component, in the size range Os to J (M16 to M100)
- b. A compressible sealing ring
- c. A compression spigot
- d. A back nut
- e. An optional earth continuity device for use with metallic sheathed cables

#### Variant 0.1.1 Type 501/421 Size 2K Variant

The Type 501/421 'Size 2K' gland comprises the following components only :-

- a. A dedicated entry component (M16)
- b. A compressible sealing ring
- c. A nylon skid washer
- d. A threaded compression spigot

#### Variant 0.2 TYPE 501/423 CABLE GLAND

The Type 501/423 Cable Gland is intended for use with an effectively filled and circular unarmoured cable and comprises the following components :-

- a. An entry component, in the size range Os to J (M16 to M100)
- b. Two compressible sealing rings
- c. Two compression spigots
- d. A middle nut
- e. A back nut
- f. An optional earth continuity device for use with metallic sheathed cables

#### Variant 0.3 TYPE 501/453 RAC CABLE GLAND

The Type 501/453 RAC Cable Gland is intended for use with an effectively filled and circular armoured or braided cable and comprises the following components :-

- a. An entry component, in the size range Os to F (M16 to M75)
- b. A compressible sealing ring
- c. A combined compression spigot and armour clamping cone
- d. A reversible armour clamping ring
- e. A middle nut
- f. An outer seal assembly (sleeve seal and support ring)
- g. A back nut
- h. An optional earth continuity device for use with metallic inner sheathed cables

---

**Variant 0.4 TYPE 501/453 CABLE GLAND**

The Type 501/453 Cable Gland is intended for use with an effectively filled and circular armoured or braided cable and comprises the following components :-

- a. An entry component, in the size range Os to J (M16 to M100)
- b. A compressible sealing ring
- c. A combined compression spigot and armour clamping cone
- d. A dedicated armour, or braid, clamping ring
- e. A middle nut
- f. An outer seal assembly (sleeve seal and support ring [Os-F] or compression ring [G-J])
- g. A back nut
- h. An optional earth continuity device for use with metallic inner sheathed cables

**Variant 0.5 TYPE PSG 553 RAC CABLE GLAND**

The Type PSG 553 RAC Cable Gland is intended for use with a circular armoured or braided cable of unspecified construction, and comprises the following components :-

- a. An entry component, in the size range A to C (M20 to M32)
- b. A compressible seal, punched to accept a number of individual conductors
- c. A combined compression spigot and armour clamping cone
- d. A reversible armour clamping ring
- e. A middle nut
- f. An outer seal assembly (sleeve seal and support ring)
- g. A back nut

**Variant 0.6 TYPE PSG 553 CABLE GLAND**

The Type PSG 553 Cable Gland is intended for use with a circular armoured or braided cable of unspecified construction, and comprises the following components :-

- a. An entry component, in the size range A to C (M20 to M32)
- b. A compressible seal, punched to accept a number of individual conductors
- c. A combined compression spigot and armour clamping cone
- d. A dedicated armour, or braid, clamping ring
- e. A middle nut
- f. An outer seal assembly (sleeve seal and support ring)
- g. A back nut

**Variant 0.7 TYPE 501/414 CONDUIT STOPPING GLAND**

The Type 501/414 Conduit Stopping Gland is intended for use with an effectively filled and circular unarmoured cable enclosed within a conduit and comprises the following components :-

- a. An entry component, in the size range A to F (M20 to M75)
- b. A compressible sealing ring
- c. A compression assembly comprising a compression spigot with a female thread at the rear and integral back nut



**Variant 0.8 TYPE SB474 CONDUIT STOPPING GLAND**

The Type SB474 Conduit Stopping Gland is intended for use with a number of circular conductors enclosed within a conduit and comprises the following components :-

- a. An entry component, in the size range A to C (M20 to M32)
- b. A compressible seal, punched to accept a number of individual conductors
- c. A compression assembly comprising a compression spigot with a female thread at the rear and integral back nut

**Variant 0.9 TYPE 501/452 RAC CABLE GLAND**

The Type 501/452 RAC Cable Gland is intended for use with an effectively filled and circular armoured or braided cable and comprises the following components :-

- a. An entry component, in the size range Os to F (M16 to M75)
- b. A compressible sealing ring
- c. A combined compression spigot and armour clamping cone
- d. A reversible armour clamping ring
- e. A back nut
- f. An optional earth continuity device for use with metallic inner sheathed cables

**16 Report Number**

Baseefa Certification Report GB/BAS/ExTR 06.0011/00

**17 Special Conditions for Safe Use**

1. These glands are suitable for use within an operating temperature range of -60°C to +80°C, or +100°C for the gland types not using the iris type outer seal assembly.
2. When the gland is used for increased safety or dust protection, the entry thread shall be suitably sealed (in accordance with IEC 60079-14) to maintain the ingress protection rating of the associated enclosure
3. Glands for use with conduit, unarmoured or braided cables are only suitable for fixed installations, the cable for which must be effectively clamped to prevent pulling and twisting.

**18 Essential Health and Safety Requirements**

All relevant Essential Health and Safety Requirements are covered by the standards listed at item 9.

**19 Drawings and Documents**

| Number                     | Issue | Date     | Description                                |
|----------------------------|-------|----------|--------------------------------------------|
| 501/421                    | F     | 26/11/04 | G. A., Type 501/421 Cable Gland            |
| 501/421 (G to J)           | F     | 26/11/04 | G. A., Type 501/421 Cable Gland (Oversize) |
| 501/423                    | F     | 26/11/04 | G. A., Type 501/423 Cable Gland            |
| 501/423 (G to J)           | F     | 26/11/04 | G. A., Type 501/423 Cable Gland (Oversize) |
| 501/453 RAC                | F     | 26/11/04 | G. A., Type 501/453 RAC Cable Gland        |
| 501/453 Dedicated          | F     | 26/11/04 | G. A., Type 501/453 Cable Gland            |
| 501/453 Dedicated (G to J) | F     | 26/11/04 | G. A., Type 501/453 Cable Gland (Oversize) |
| PSG 553 RAC                | D     | 03/10/05 | G. A., Type PSG 553 RAC Cable Gland        |
| PSG 553 Dedicated          | D     | 03/10/05 | G. A., Type PSG 553 Cable Gland            |





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| Number      | Issue | Date     | Description                               |
|-------------|-------|----------|-------------------------------------------|
| 501/414     | F     | 26/11/05 | G. A., Type 501/414 Conduit Stopper Gland |
| SB 474      | F     | 03/10/05 | G. A., Type SB474 Conduit Stopper Box     |
| 501/452 RAC | F     | 26/11/04 | G. A., Type 501/452 RAC Cable Gland       |

These drawings are common to BAS IECEx 05.0013X and are controlled on and held with GB/BAS/ExTR 06.0011/00



**SUPPLEMENTARY EC - TYPE EXAMINATION CERTIFICATE**

**Equipment or Protective System Intended for use in Potentially Explosive Atmospheres  
Directive 94/9/EC**

- 3 Supplementary EC - Type Examination Certificate Number: **Baseefa06ATEX0056X/1**
- 4 Equipment or Protective System: **A Range of Cable Glands with Compression Type Seals**
- 5 Manufacturer: **Hawke International**
- 6 Address: **Oxford Street West, Ashton-under-Lyne, Lancashire, OL7 0NA**
- 7 This supplementary certificate extends EC - Type Examination Certificate No. **Baseefa06ATEX0056X** to apply to equipment or protective systems designed and constructed in accordance with the specification set out in the Schedule of the said certificate but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.

This supplementary certificate shall be held with the original certificate.

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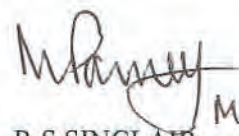
Baseefa Customer Reference No. 0500

Project File No. 07/0054

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**Baseefa**

Rockhead Business Park, Staden Lane,  
Buxton, Derbyshire SK17 9RZ  
Telephone +44 (0) 1298 766600 Fax +44 (0) 1298 766601  
e-mail [info@baseefa.com](mailto:info@baseefa.com) web site [www.baseefa.com](http://www.baseefa.com)  
Baseefa is a trading name of Baseefa (2001) Ltd  
Registered in England No. 4305578 at the above address

  
R S SINCLAIR  
DIRECTOR  
On behalf of  
Baseefa (2001) Ltd.



---

## Schedule

13

14

Certificate Number Baseefa06ATEX0056X/1

15

### Description of the variation to the Equipment or Protective System

#### Variation 1.1

To allow the use of an alternative entry component and rear compression nut on the Type 501/421 Cable Gland intended for use with an effectively filled and circular unarmoured cable and comprises the following components:

- a. An alternative entry component, in the size range Os to F (M16 to M75)
- b. A compressible sealing ring
- c. A compression spigot
- d. An alternative rear compression nut in size range Os to F
- e. An optional earth continuity device for use with metallic sheathed cables.

The alternative rear compression nut can be readily interchanged with the existing certified components.

#### Variation 1.2

To allow the use of an alternative entry component, body nut and rear compression nut on the Type 501/423 Cable Gland intended for use with an effectively filled and circular unarmoured cable and comprises the following components:

- a. An alternative entry component, in the size range Os to F (M16 to M75)
- b. Two compressible sealing rings
- c. Two compression spigots
- d. An alternative body nut in size range Os to F
- e. An alternative rear compression nut in size range Os to F
- f. An optional earth continuity device for use with metallic sheathed cables.

The alternative body nut and rear compression nut can be readily interchanged with the existing certified components.

#### Variation 1.3

To allow the use of an alternative entry component, and alternative compression spigot (body) and integral rear compression nut on the Type 501/414 Conduit Stopping Gland intended for use with an effectively filled and circular unarmoured cable enclosed within a conduit and comprises the following components:

- a. An alternative entry component, in the size range O to F (M16 to M75)
- b. A compressible sealing ring
- c. An alternative compression assembly comprising a compression spigot with a female thread at the rear (body) and integral alternative rear compression nut.

The alternative compression spigot and integral rear compression nut can be readily interchanged with the existing certified components.

#### Variation 1.4

To allow the use of an alternative entry component, and alternative compression spigot and integral rear compression nut on the Type SB474 Conduit Stopping Gland is intended for use with a number of circular conductors enclosed within a conduit and comprises the following components:

- a. An alternative entry component, in the size range A to C (M20 to M32)
- b. A compressible seal, punched to accept a number of individual conductors



- c. An alternative compression assembly comprising a compression spigot with a female thread at the rear (body) and integral back nut.

The alternative compression spigot (body) and integral rear compression nut can be readily interchanged with the existing certified components.

**16 Report Number**

Baseefa Certification Report IECEx GB/BAS/ExTR 07.0021/00

**17 Special Conditions for Safe Use**

None additional to those listed previously

**18 Essential Health and Safety Requirements**

Compliance with the Essential Health and Safety Requirements is not affected by this variation.

**19 Drawings and Documents**

| Number  | Issue | Date     | Description                               |
|---------|-------|----------|-------------------------------------------|
| 501/421 | G     | 22/01/07 | G. A., Type 501/421 Cable Gland           |
| 501/423 | G     | 22/01/07 | G. A., Type 501/423 Cable Gland           |
| 501/414 | G     | 22/01/07 | G. A., Type 501/414 Conduit Stopper Gland |
| SB474   | G     | 22/01/07 | G. A., Type SB474 Conduit Stopper Box     |

These Drawings Rare common to IECEx BAS 06.0013X and are held with that certificate





**SUPPLEMENTARY EC - TYPE EXAMINATION CERTIFICATE**

**Equipment or Protective System Intended for use in Potentially Explosive Atmospheres  
Directive 94/9/EC**

- 3 Supplementary EC - Type Examination Certificate Number: **Baseefa06ATEX0056X/2**
- 4 Equipment or Protective System: **A Range of Cable Glands with Compression Type Seals**
- 5 Manufacturer: **Hawke International**
- 6 Address: **Oxford Street West, Ashton-under-Lyne, Lancashire, OL7 0NA**
- 7 This supplementary certificate extends EC – Type Examination Certificate No. **Baseefa06ATEX0056X** to apply to equipment or protective systems designed and constructed in accordance with the specification set out in the Schedule of the said certificate but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.

This supplementary certificate shall be held with the original certificate.

This certificate may only be reproduced in its entirety, without any change, schedule included.

Baseefa Customer Reference No. **0500**

Project File No. **07/0285**

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**Baseefa**

Rockhead Business Park, Staden Lane,  
Buxton, Derbyshire SK17 9RZ  
Telephone +44 (0) 1298 766600 Fax +44 (0) 1298 766601  
e-mail [info@baseefa.com](mailto:info@baseefa.com) web site [www.baseefa.com](http://www.baseefa.com)  
Baseefa is a trading name of Baseefa (2001) Ltd  
Registered in England No. 4305578 at the above address

**R S SINCLAIR**

**DIRECTOR**  
On behalf of  
Baseefa (2001) Ltd.

Re-issued 19<sup>th</sup> February 2007 to replace original



13

## Schedule

14

Certificate Number Baseefa06ATEX0056X/2

15 Description of the variation to the Equipment or Protective System

### Variation 2.1

To allow the introduction of a Type 8430-501/453 J M100 cable gland for use with an effectively filled and circular armoured or braided cable and comprising the following components.

- a. An entry component
- b. A compressible sealing ring
- c. A compression spigot
- d. A middle nut
- e. A backnut and rear seal arrangement.

16 Report Number

IECEX GB/BAS/ExTR 07.0057/00

17 Special Conditions for Safe Use

This gland may only be used for fixed cable installations of Group II equipment. The user shall ensure that the cable is effectively clamped to prevent pulling and twisting.

18 Essential Health and Safety Requirements

Compliance with the Essential Health and Safety Requirements is not affected by this variation.

19 Drawings and Documents

| Number                    | Issue | Date    | Description                          |
|---------------------------|-------|---------|--------------------------------------|
| 8430-501/453 Sheets 1 & 2 | A     | 23/3/07 | G. A., Type 8430-501/453 Cable Gland |

These drawings are common to and held with IECEX BAS 06.0013X.





**SUPPLEMENTARY EC - TYPE EXAMINATION CERTIFICATE**

**Equipment or Protective System Intended for use in Potentially Explosive Atmospheres  
Directive 94/9/EC**

- 3 Supplementary EC - Type Examination Certificate Number: **Baseefa06ATEX0056X/3**
- 4 Equipment or Protective System: **A Range of Cable Glands with Compression Seals**
- 5 Manufacturer: **Hawke International**
- 6 Address: **Oxford Street West, Ashton-under-Lyne, Lancashire, OL7 0NA**
- 7 This supplementary certificate extends EC - Type Examination Certificate No. Baseefa06ATEX0056X to apply to equipment or protective systems designed and constructed in accordance with the specification set out in the Schedule of the said certificate but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.

This supplementary certificate shall be held with the original certificate.

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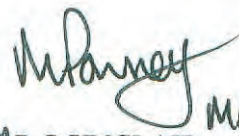
Baseefa Customer Reference No. 0500

Project File No. 07/0770

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**Baseefa**

Rockhead Business Park, Staden Lane,  
Buxton, Derbyshire SK17 9RZ  
Telephone +44 (0) 1298 766600 Fax +44 (0) 1298 766601  
e-mail [info@baseefa.com](mailto:info@baseefa.com) web site [www.baseefa.com](http://www.baseefa.com)  
Baseefa is a trading name of Baseefa Ltd  
Registered in England No. 4305578. Registered address as above.

  
R S SINCLAIR  
DIRECTOR  
On behalf of  
Baseefa





13

## Schedule

14

Certificate Number Baseefa06ATEX0056X/3

15 Description of the variation to the Equipment or Protective System

### Variation 3.1

TYPE 501/421 CABLE GLAND

To allow the use of a modified entry component 3080 and rear compression nut 3077 on the Type 501/421 2K Cable Gland intended for use with an effectively filled and circular unarmoured cable.

### Variation 3.2

TYPE 501/453 DEDICATED and PSG 553 DEDICATED GLANDS Sizes O to F

To allow the introduction of alternative dedicated armour clamping rings 3259 and 3260 together with the use of alternative middle nut 3257 and entry component 3250.

### Variation 3.3

TYPE 501/453 RAC and PSG 553 RAC GLANDS

To allow the use of a modified 3041 RAC clamping ring on the gland sizes Os/O and A, also to allow the use of the alternative middle nut 3257 and entry component 3250 on glands sizes Os to F.

### Variation 3.4

TYPE 501/452 RAC CABLE GLAND

To allow the use of a modified 3041 RAC clamping ring on the gland sizes Os/O and A, also to allow the use of the alternative back nut 3258 and entry component 3250 on glands sizes Os to F.

16 Report Number

Baseefa Certification Report GB/BAS/ExTR008.0173/00

17 Special Conditions for Safe Use

None additional to those listed previously

18 Essential Health and Safety Requirements

Compliance with the Essential Health and Safety Requirements is not affected by this variation.

19 Drawings and Documents

| Number            | Issue | Date     | Description                            |
|-------------------|-------|----------|----------------------------------------|
| PSG 553 Dedicated | G     | 14/09/07 | G A Type PSG 553 Dedicated Cable Gland |
| 501/453 Dedicated | G     | 04/07/08 | G A Type 501/453 Dedicated Gland       |
| PSG 553           | G     | 14/09/07 | G A Type PSG 553 RAC Cable Gland       |
| 501/453 RAC       | G     | 14/09/07 | G A Type 501/453 RAC Cable Gland       |
| 501/452 RAC       | G     | 14/09/07 | G A Type 501/452 RAC Cable Gland       |

These drawings are common to IECEx BAS 06.0013X and are held with that certificate



**1 SUPPLEMENTARY EC - TYPE EXAMINATION CERTIFICATE**

**2 Equipment or Protective System Intended for use in Potentially Explosive Atmospheres  
Directive 94/9/EC**

**3 Supplementary EC - Type Examination Certificate Number: Baseefa06ATEX0056X/4**

**4 Equipment or Protective System: A Range of Cable Glands with Compression Seals**

**5 Manufacturer: Hawke International**

**6 Address: Oxford Street West, Ashton-under-Lyne, Lancashire, OL7 0NA**

**7 This supplementary certificate extends EC – Type Examination Certificate No. Baseefa06ATEX0056X to apply to equipment or protective systems designed and constructed in accordance with the specification set out in the Schedule of the said certificate but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.**

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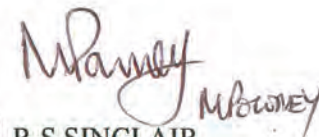
Baseefa Customer Reference No. 0500

Project File No. 09/0174

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**Baseefa**

Rockhead Business Park, Staden Lane,  
Buxton, Derbyshire SK17 9RZ  
Telephone +44 (0) 1298 766600 Fax +44 (0) 1298 766601  
e-mail [info@baseefa.com](mailto:info@baseefa.com) web site [www.baseefa.com](http://www.baseefa.com)  
Baseefa is a trading name of Baseefa Ltd  
Registered in England No. 4305578. Registered address as above.

  
R S SINCLAIR  
DIRECTOR  
On behalf of  
Baseefa





13

## Schedule

14

Certificate Number Baseefa06ATEX0056X/4

15

### Description of the variation to the Equipment or Protective System

#### Variation 4.1

To introduce an alternative iris type back seal either singly or in conjunction with a reversible clamping ring (RAC) to the gland type 501/453 Oversize Dedicated gland for sizes G, H and J.

Alternative parts, iris back seal only.

- a) 3034 Back nut
- b) 3035 Back nut seal
- c) 3036 Back nut clamp
- d) 3272 Middle nut

Alternative parts, iris back seal in conjunction an RAC ring.

- a) 3047 Spigot
- b) 3055 Middle nut
- c) 3041 RAC ring
- d) 3034 Back Nut
- e) 3035 Back nut seal
- f) 3036 Back nut clamp

16

### Report Number

Baseefa Certification Report GB/BAS/ExTR 09.0165/00 held with IECEx BAS 06.0013X

17

### Special Conditions for Safe Use

None additional to those listed previously

18

### Essential Health and Safety Requirements

Compliance with the Essential Health and Safety Requirements is not affected by this variation.

19

### Drawings and Documents

| Number           | Issue | Date     | Description                                 |
|------------------|-------|----------|---------------------------------------------|
| 501/453 Oversize | G     | 29/05/09 | G. A., Type 501/453 Oversize Clamping Gland |

This drawing is common to, and held with, IECEx BAS 06.0013X





1 **SUPPLEMENTARY EC - TYPE EXAMINATION CERTIFICATE**

2 **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres**  
**Directive 94/9/EC**

3 Supplementary EC - Type Examination Certificate Number: **Baseefa06ATEX0056X/5**

4 Equipment or Protective System: **A Range of Cable Glands with Compression Seals**

5 Manufacturer: **Hawke International (A Division of Hubbell Limited)**

6 Address: **Oxford Street West, Ashton-under-Lyne, Lancashire, OL7 0NA**

7 This supplementary certificate extends EC - Type Examination Certificate No. Baseefa06ATEX0056X to apply to equipment or protective systems designed and constructed in accordance with the specification set out in the Schedule of the said certificate but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.

This supplementary certificate shall be held with the original certificate.

This certificate may only be reproduced in its entirety, without any change, schedule included.

Baseefa Customer Reference No. **0500**

Project File No. **09/0338 and 10/0100**

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**Baseefa**

Rockhead Business Park, Staden Lane,  
Buxton, Derbyshire SK17 9RZ  
Telephone +44 (0) 1298 766600 Fax +44 (0) 1298 766601  
e-mail [info@baseefa.com](mailto:info@baseefa.com) web site [www.baseefa.com](http://www.baseefa.com)  
Baseefa is a trading name of Baseefa Ltd  
Registered in England No. 4305578. Registered address as above.

**R S SINCLAIR**  
**DIRECTOR**  
On behalf of  
Baseefa

Re-issued 26<sup>th</sup> August 2011 to correct standards



13 **Schedule**

14 **Certificate Number Baseefa06ATEX0056X/5**

15 **Description of the variation to the Equipment or Protective System**

**Variation 5.1**

To allow an increase in the upper service temperature of the glands to 100°C except for the PSG gland types together with the introduction of an alternative backnut seal assembly. In addition the glands are considered to comply with the following standards and may be marked accordingly.

EN 60079-0: 2009, EN 60079-1: 2007 EN 60079-7: 2007, and EN 60079-31: 2009

16 **Report Number**

Baseefa Certification Report GB/BAS/ExTR 10.0287/00 held with IECEx BAS 06.0013X

17 **Special Conditions for Safe Use**

None additional to those listed previously

18 **Essential Health and Safety Requirements**

Compliance with the Essential Health and Safety Requirements is not affected by this variation.

19 **Drawings and Documents**

| Number            | Issue | Date     | Description                                                      |
|-------------------|-------|----------|------------------------------------------------------------------|
| 501/421           | H     | 30/06/10 | General Arrangement Unarmoured 501/421 Gland                     |
| 501/421 G to J    | G     | 30/06/10 | General Arrangement Unarmoured 501/421 Oversize Gland            |
| 501/423           | H     | 30/06/10 | General Arrangement 501/423 Gland                                |
| 501/423 G to J    | G     | 30/06/10 | General Arrangement 501/423 Oversize Gland                       |
| 501/453RAC        | H     | 30/06/10 | General arrangement 501/453 RAC Gland                            |
| 501/452RAC        | H     | 30/06/10 | General Arrangement 501/452 RAC Gland                            |
| 501/453 Dedicated | H     | 05/07/10 | General arrangement 501/453 Dedicated Gland                      |
| 501/453 Oversized | H     | 30/06/10 | General Arrangement of 501/453 Oversized Armour Clamping Glands  |
| SB474             | H     | 30/06/10 | General Arrangement SB 474 Gland                                 |
| 501/414           | H     | 30/06/10 | General Arrangement 501/414 Conduit Stopper Box Compression Seal |
| PSG553 Dedicated  | H     | 30/06/10 | General arrangement PSG 553 Gland                                |
| PSG553 RAC        | H     | 07/07/10 | General arrangement PSG 553 RAC Gland                            |

These drawings are common to and are held with IECEx BAS 06.0013X





## SUPPLEMENTARY EC - TYPE EXAMINATION CERTIFICATE

Equipment or Protective System Intended for use in Potentially Explosive Atmospheres  
Directive 94/9/EC

- 3 Supplementary EC - Type Examination Certificate Number: Baseefa06ATEX0056X/6
- 4 Equipment or Protective System: A Range of Cable Glands with Compression Seals
- 5 Manufacturer: Hawke International ( Division of Hubbell Limited)
- 6 Address: Oxford Street West, Ashton-under-Lyne, Lancashire, OL7 0NA
- 7 This supplementary certificate extends EC – Type Examination Certificate No. Baseefa06ATEX0056X to apply to equipment or protective systems designed and constructed in accordance with the specification set out in the Schedule of the said certificate but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.

This supplementary certificate shall be held with the original certificate.

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Baseefa Customer Reference No. 0500

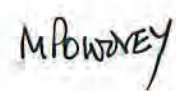
Project File No. 11/0741 and 11/0943

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### Baseefa

Rockhead Business Park, Staden Lane,  
Buxton, Derbyshire SK17 9RZ  
Telephone +44 (0) 1298 766600 Fax +44 (0) 1298 766601  
e-mail [info@baseefa.com](mailto:info@baseefa.com) web site [www.baseefa.com](http://www.baseefa.com)  
Baseefa is a trading name of Baseefa Ltd  
Registered in England No. 4305578. Registered address as above.

  
R S SINCLAIR  
DIRECTOR  
On behalf of  
Baseefa







13

## Schedule

14

Certificate Number Baseefa06ATEX0056X/6

### 15 Description of the variation to the Equipment or Protective System

#### Variation 6.1

To allow the replacement of the 7° armour clamping components with 5° armour clamping components on gland sizes Os, O and A.

#### Variations 6.2

The introduction of a range of non reversible dedicated armour clamping rings in this form the RAC stamping is followed by DED and W, X, Y or Z to indicate the type of armour that may be fitted.

#### Variations 6.3

To allow the introduction of a rear clamping mechanism, to prevent pulling and twisting of the cable, to the 501/421 gland size B, in this form the gland is designated as a 501/421R

### 16 Report Number

Baseefa Certification Report GB/BAS/ExTR 11.0274/00 held with IECEx BAS 06.0013X

### 17 Special Conditions for Safe Use

For variations 6.1 and 6.2 no additional Special Conditions for Safe Use apply other than those listed previously.

For variation 6.3 the Special Conditions for Safe Use are limited to the following:

1. These glands are suitable for use within an operating temperature range of -60°C to +100°C
2. When the gland is used for increased safety or dust protection, the entry thread is to be suitably sealed, in accordance with IEC 60079-14, to maintain the ingress protection rating of the associated enclosure

### 18 Essential Health and Safety Requirements

Compliance with the Essential Health and Safety Requirements is not affected by this variation.

### 19 Drawings and Documents

| Number     | Issue | Date     | Description                             |
|------------|-------|----------|-----------------------------------------|
| 501/421R   | A     | 01/02/12 | General Arrangement of Type 421R Gland  |
| 501/421    | J     | 16/08/11 | General Arrangement of Type 421 Gland   |
| 501/453RAC | J     | 16/08/11 | General arrangement 501/453 RAC Gland   |
| 501/453DED | J     | 16/08/11 | General arrangement 501/453 DED Gland   |
| 501/452RAC | J     | 16/08/11 | General Arrangement 501/452 RAC Gland   |
| 501/414    | J     | 16/08/11 | General arrangement 501/414 Stopper Box |
| 501/423    | J     | 16/08/11 | General arrangement 501/423 Gland       |
| SB 474     | J     | 16/08/11 | General arrangement SB 474 Gland        |
| PSG553 RAC | J     | 16/08/11 | General arrangement PSG 553 RAC Gland   |
| PSG553 DED | J     | 16/08/11 | General arrangement PSG 553 DED Gland   |

These drawings are common to, and held with, IECEx BAS 06.0013X

#### **SCHEDULE OF LIMITATIONS - Baseefa ATEX / IECEx:**

1. The cable glands when used with braided cable types are only suitable for use with fixed apparatus, the cable for which must be effectively clamped and cleated elsewhere.
2. This cable gland has an operating temperature range of -60°C to +80°C.
3. A seal must be formed between the equipment and the cable gland to maintain the appropriate degree of protection against ingress of dust, solid objects and water.

#### **NOTES - c CSA us:**

1. The cable used must have extruded sealing (solid polymeric) completely surrounding the "core" (insulation and conductor), allowing for no holes or ventilation through the inner jacket or along the cores.
2. The 501/4\*\* series cable gland connectors, when used in Class 1 Division 2 Classified areas, are not suitable to be interfaced with an explosion proof enclosure containing arcing and sparking devices, unless installed in conjunction with an approved explosion proof sealing fitting.
3. These glands are suitable for use with Certified Marine Shipboard armoured / unarmoured cables constructed to CSA Standard 245 and IEEE45 / IEC 600092-353 Standards, or certified equivalent), for use on Shipboards and Offshore Rigs / Platforms.
4. Must comply with Canadian Electrical Code and National Electric Code requirements for threaded entries.
5. For Exe applications, a sealing washer or thread sealant may be required between the enclosure and the gland to maintain the IP rating of the enclosure.
6. When used with unarmoured or braided cables the glands are only suitable for use with fixed apparatus and the cable must be effectively clamped and cleated elsewhere.
7. This cable gland may only be installed when temperature is above -5°C. After completion of the installation, the assembly is then suitable for -60°C to +80°C.

#### **Declaration of Conformity in accordance with European Directive 94/9/EC**

**Manufacturer: Hawke International**

**Address: Oxford Street West, Ashton-under-Lyne, OL7 0NA, United Kingdom.**

**Equipment Type: Range of Group II Universal Cable Glands type: 501/453/UNIV**

#### **Directive 94/9/EC ATEX**

Provisions of the Directive fulfilled by the Equipment: Group II Category 2/3GD Exe IIC Gb, Exd IIC Gb, Extb IIIC Db, ExnR IIC Gc – IP66

**Notified Body for EC-Type Examination:** Baseefa 1180 Buxton UK

**EC-type Examination Certificate:** Baseefa06ATEX0057X, ExnR covered on Baseefa 09ATEX0233X

**Notified Body for production:** SGS-Baseefa 1180 Buxton UK

#### **Harmonized Standards used:**

EN 60079-0:2012, EN60079-1:2014, EN60079-7:2007, EN60079-15:2010, EN60079-31:2010.

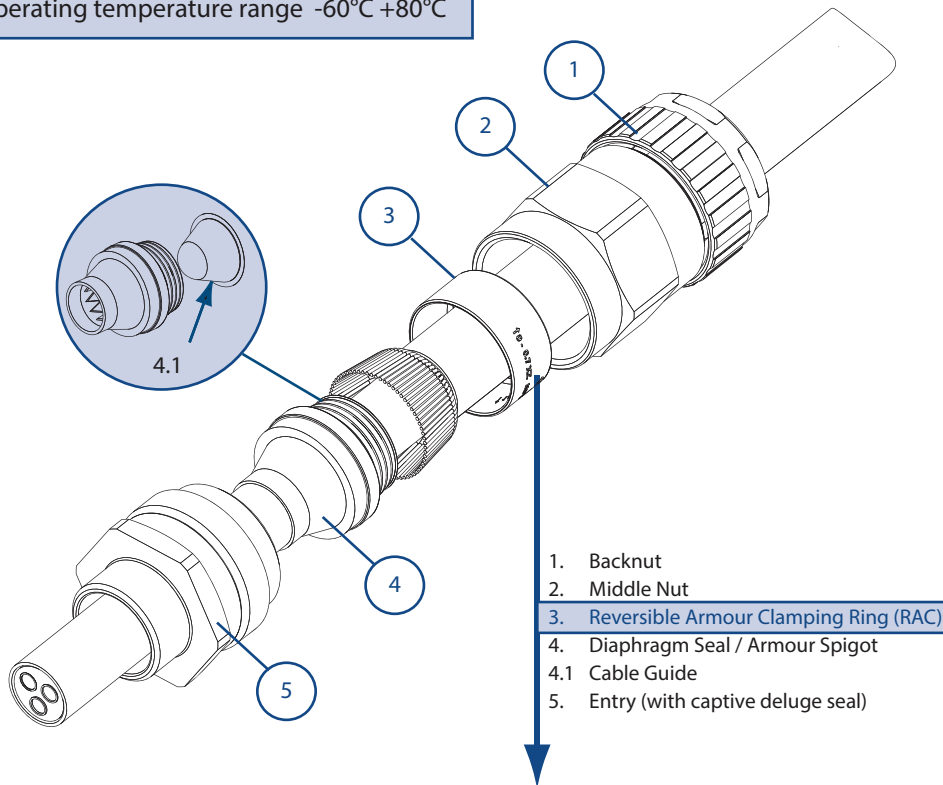
**On behalf of the above named company, I declare that, on the date the equipment accompanied by this declaration is placed on the market, the equipment conforms with all technical and regulatory requirements of the above listed directives.**



**A. Tindall**  
**Technical Manager**

Assembly Instructions for cable gland:  
501/453/UNIV  
Exd IIC Gb / Exe IIC Gb / ExnR IIC Gc / Extb IIIC Db

Operating temperature range -60°C +80°C

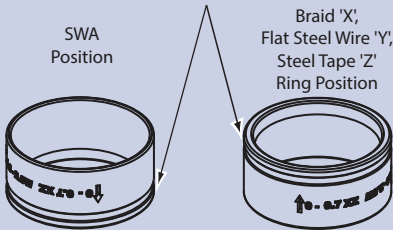


Certification Details

Gland Type: 501/453/UNIV  
Exd IIC Gb / Exe IIC Gb / ExnR IIC Gc / Extb IIIC Db  
Baseefa06ATEX0057X II 2 / 3GD IP66 CE  
IECEX BAS06.0014X  
CEPEL 01.0063X  
EAC TC RU C-GB.1505.B.00750  
c CSA us No: 1015065  
Class 1 Zone 1 AExd IIC, AExe II, Zone 21 AExtd  
Class 1 Div 2 ABCD, Class II Div 2 Groups EFG, Class III  
CNEx12.3452X

Reversible Armour Clamping Ring (RAC)

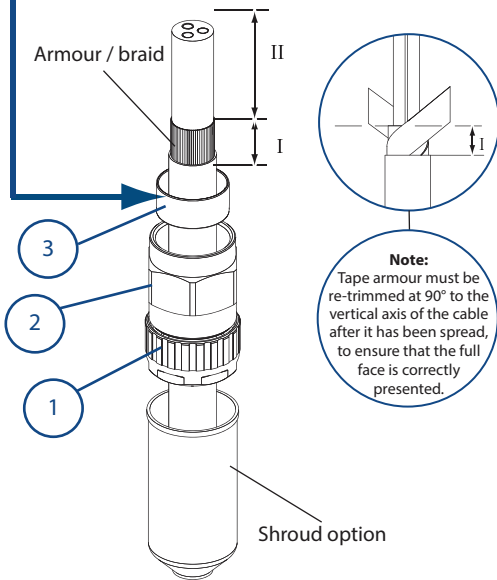
General identification ring orientation for:



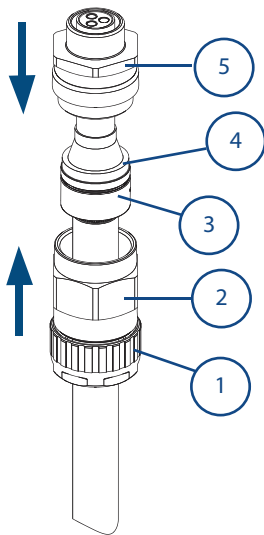
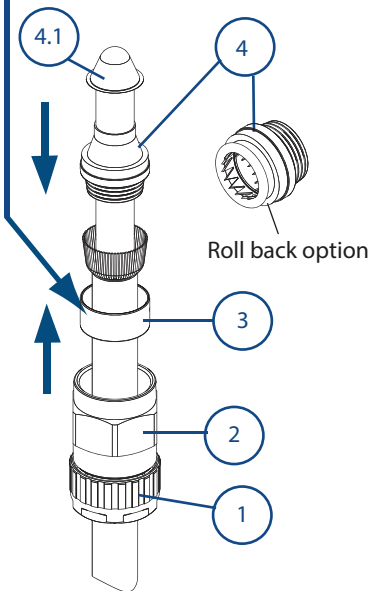
**IMPORTANT:** The arrowhead indicating the correct armour thickness or type should point towards the equipment

**Note:** Cable acceptance sizes are marked on the diaphragm seal, clamping ring and backnut.

Cable Preparation



Gland Preparation

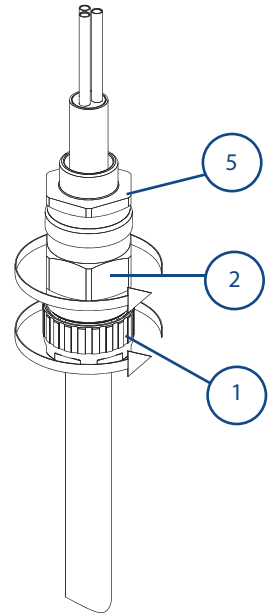
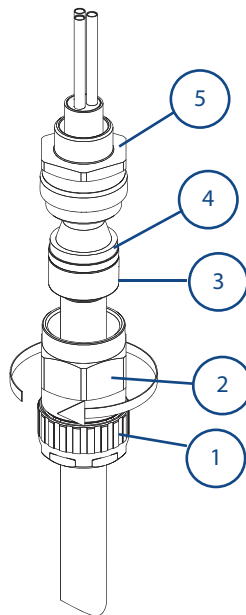
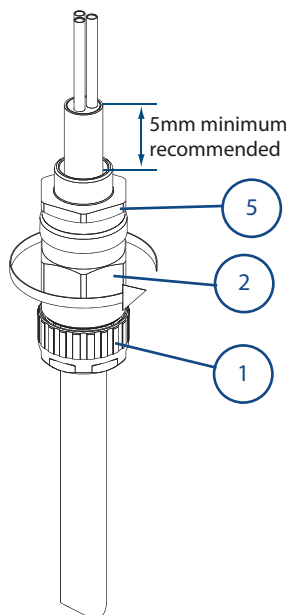


**A**  
Strip cable to suit equipment as shown above and expose the armour / braid 'I'.  
'I' = 20mm for cable gland sizes Os to C  
'I' = 25mm for cable gland sizes C2 to F  
'II' = to suit equipment.  
If required, fit shroud

**B**  
Push the cable through the diaphragm seal / armour spigot ④. Pre-fitted cable guide ④.1 can now be discarded. The diaphragm seal can be rolled back to ease assembly if required. Spread armour / braid over the diaphragm seal / armour spigot ④ until the end of the armour / braid is up against the shoulder of the armour cone. Position the armour clamping ring ③.

**C**  
Place the entry ⑤ and position over the diaphragm seal / armour spigot ④. Move the sub-assembly ① and ② up to meet the entry ⑤.





**D**  
Hold the entry ⑤ in position with a spanner / wrench to prevent rotation. Hand tighten the middle nut ② to the entry ⑤ and turn a further 1/2 to 3/4 of a turn with a spanner / wrench.

**IMPORTANT:** Support the cable to prevent it from twisting. To ease wiring inside the enclosure, it may be beneficial to strip the inner sheath of the cable as shown above.

**E**  
Unscrew the middle nut ② and visually inspect that the armour / braid has been successfully clamped between the diaphragm seal / armour spigot ④ and the armour clamping ring ③. If armour / braid not clamped, repeat assembly.

**F**  
Reassemble middle nut ② onto the entry component ⑤. Tighten up the middle nut ② until hand tight, then using a wrench / spanner, turn the nut through 1/4 turn. Tighten the backnut ① to form a seal around the cable, then tighten a further full turn using a wrench / spanner. Ensure that the middle nut ② does not rotate when tightening the backnut ①.

**Note:** The deluge seal on this gland locates on assembly and requires no further action. Locate shroud over cable gland, if applicable.

| Cable Gland Selection Table |                   |           |                          |           |              |      |               |               |                   |                |                    |                |
|-----------------------------|-------------------|-----------|--------------------------|-----------|--------------|------|---------------|---------------|-------------------|----------------|--------------------|----------------|
| Size Ref.                   | Entry Thread Size |           | Cable Acceptance Details |           |              |      |               |               | Compressed Length | Maximum Length | Hexagon Dimensions |                |
|                             |                   |           | Inner Sheath             |           | Outer Sheath |      | Armour Braid  |               |                   |                |                    |                |
|                             | Metric            | NPT       | Min.                     | Max.      | Min.         | Max. | Orientation 1 | Orientation 2 |                   |                | Across Flats       | Across Corners |
| Os                          | M20 <sup>•</sup>  | ½"        | 3.5                      | 8.1       | 5.5          | 12.0 | 0.8/1.25      | 0/0.8         | 61.6              | 72.8           | 24.0               | 26.5           |
| O                           | M20 <sup>•</sup>  | ½"        | 6.5                      | 11.4      | 9.5          | 16.0 | 0.8/1.25      | 0/0.8         | 61.6              | 72.8           | 24.0               | 26.5           |
| A                           | M20               | ½" - ¾"   | 8.4                      | 14.3      | 12.5         | 20.5 | 0.8/1.25      | 0/0.8         | 63.0              | 74.2           | 30.0               | 32.5           |
| B                           | M25               | ¾" - 1"   | 11.1                     | 19.7      | 16.9         | 26.0 | 1.25/1.6      | 0/0.7         | 69.9              | 79.7           | 36.0               | 39.5           |
| C                           | M32               | 1" - 1¼"  | 17.6                     | 26.5      | 22.0         | 33.0 | 1.6/2.0       | 0/0.7         | 73.2              | 83.7           | 46.0               | 50.5           |
| C2                          | M40               | 1¼" - 1½" | 23.1                     | 32.5      | 28.0         | 41.0 | 1.6/2.0       | 0/0.7         | 77.9              | 90.6           | 55.0               | 60.6           |
| D                           | M50               | 1½" - 2"  | 28.9                     | 44.4/42.3 | 36.0         | 52.6 | 1.8/2.5       | 0/1.0         | 93.5              | 112.6          | 65.0               | 70.8           |
| E                           | M63               | 2" - 2½"  | 39.9                     | 56.3/54.3 | 46.0         | 65.3 | 1.8/2.5       | 0/1.0         | 94.0              | 110.2          | 80.0               | 88.0           |
| F                           | M75               | 2½" - 3"  | 50.5                     | 65.3/68.2 | 57.0         | 78.0 | 1.8/2.5       | 0/1.0         | 103.0             | 119.7          | 95.0               | 104.0          |

\* Sizes Os and O are available with an M16 thread size. If M16 entry is used on O size cable glands the maximum cable inner sheath diameter is limited to 10.9mm.

#### ACCESSORIES:

Before cable gland assembly or stripping of the cable gland assembly, consideration should be given to any cable gland accessories that may be required, such as: -

- Shroud, to offer additional corrosion protection.
- Locknut, to secure cable glands into position.
- Sealing washer, to offer additional ingress protection of the enclosure at the cable gland entry.
- Earthtag, to provide an external armour / braid bonding point.
- Serrated washer, to dampen any vibrations that may loosen the locknut or cable gland assembly.



## EC - TYPE EXAMINATION CERTIFICATE

Equipment or Protective System Intended for use in Potentially Explosive Atmospheres  
Directive 94/9/EC

- 3 EC - Type Examination Certificate Number: **Baseefa06ATEX0057X**
- 4 Equipment or Protective System: **Type 501/453UNIV Cable Glands**
- 5 Manufacturer: **Hawke International**
- 6 Address: **Oxford Street West, Ashton-under-Lyne, Lancashire, OL7 0NA**
- 7 This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.
- 8 Baseefa (2001) Ltd., Notified Body number 1180, in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive.
- The examination and test results are recorded in confidential Report No. **GB/BAS/ExTR 06.0012/00**
- 9 Compliance with the Essential Health and Safety Requirements has been assured by compliance with:  
**EN60079-0: 2004, EN60079-1: 2004, EN60079-7: 2003 + Amendment 1, IEC61241-0: 2004, IEC61241-1: 2004**  
except in respect of those requirements listed at item 18 of the Schedule.
- 10 If the sign "X" is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.
- 11 This EC - TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified equipment or protective system. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.
- 12 The marking of the equipment or protective system shall include the following :

**Ex II 2GD Ex d IIC Ex e II Ex tD A21 IP66 (- 60°C ≤ ta ≤ + 80°C)**

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Baseefa Customer Reference No. **0500**

Project File No. **04/0382**

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### Baseefa

Rockhead Business Park, Staden Lane,  
Buxton, Derbyshire SK17 9RZ  
Telephone +44 (0) 1298 766600 Fax +44 (0) 1298 766601  
e-mail [info@baseefa.com](mailto:info@baseefa.com) web site [www.baseefa.com](http://www.baseefa.com)  
Baseefa is a trading name of Baseefa (2001) Ltd  
Registered in England No. 4305578 at the above address

**R S SINCLAIR**  
**DIRECTOR**  
On behalf of  
Baseefa (2001) Ltd.





13 **Schedule**

14 **Certificate Number Baseefa06ATEX0057X**

15 **Description of Equipment or Protective System**

The Type 501/453 Universal Cable Gland may be manufactured in brass, stainless steel or aluminium and is intended for use with an effectively filled and circular armoured or braided cable and comprises the following components:

- a. An entry component, in the size range Os to F (M16 to M75)
- b. A combined silicone inner seal, polymer support ring and metallic armour clamping cone.
- c. A reversible armour clamping ring.
- d. A middle nut.
- e. An outer seal assembly (sleeve seal and support ring).
- f. A back nut.
- g. An optional earth continuity device for use with metallic inner sheathed cables

These glands may be supplied with specified alternative entry thread forms

16 **Report Number**

Baseefa Certification Report GB/BAS/ExTR 06.0012/00

17 **Special Conditions for Safe Use**

1. These glands are suitable for use within an operating temperature range of -60°C to +80°C.
2. When the gland is used for increased safety or dust protection, the entry thread shall be suitably sealed to maintain the ingress protection rating of the associated enclosure
3. Glands for use with braided cables are only suitable for fixed installations, the cable for which must be effectively clamped to prevent pulling and twisting

18 **Essential Health and Safety Requirements**

All relevant Essential Health and Safety Requirements are covered by the standards listed at item 9.

19 **Drawings and Documents**

| Number       | Issue | Date     | Description                               |
|--------------|-------|----------|-------------------------------------------|
| 501/453 UNIV | F     | 26/11/04 | G. A., Type 501/453 Universal Cable Gland |

This drawing are common to BAS IECEx 05.0014X and is controlled on and held with GB/BAS/ExTR 06.0012/00





**SUPPLEMENTARY EC - TYPE EXAMINATION CERTIFICATE**

**Equipment or Protective System Intended for use in Potentially Explosive Atmospheres  
Directive 94/9/EC**

- 3 Supplementary EC - Type Examination Certificate Number: **Baseefa06ATEX0057X/1**
- 4 Equipment or Protective System: **Type 501/453UNIV Cable Glands**
- 5 Manufacturer: **Hawke International, A Division of Hubbell Limited**
- 6 Address: **Oxford Street West, Ashton-under-Lyne, Lancashire OL7 0NA**
- 7 This supplementary certificate extends EC - Type Examination Certificate No. **Baseefa06ATEX0057X** to apply to equipment or protective systems designed and constructed in accordance with the specification set out in the Schedule of the said certificate but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.

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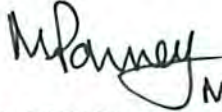
Baseefa Customer Reference No. **0500**

Project File No. **08/0234**

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**Baseefa**

Rockhead Business Park, Staden Lane,  
Buxton, Derbyshire SK17 9RZ  
Telephone +44 (0) 1298 766600 Fax +44 (0) 1298 766601  
e-mail [info@baseefa.com](mailto:info@baseefa.com) web site [www.baseefa.com](http://www.baseefa.com)  
Baseefa is a trading name of Baseefa Ltd  
Registered in England No. 4305578. Registered address as above.

  
PP R S SINCLAIR  
DIRECTOR  
On behalf of  
Baseefa



13

## Schedule

14

Certificate Number Baseefa06ATEX0057X/1

15 Description of the variation to the Equipment or Protective System

### Variation 1.1

The introduction an alternative diaphragm assembly.

16 Report Number

Baseefa Confidential Report No. UK/BAS/04/0259/03

17 Special Conditions for Safe Use

None additional to those listed previously

18 Essential Health and Safety Requirements

Compliance with the Essential Health and Safety Requirements is not affected by this variation.

19 Drawings and Documents

| Number       | Issue | Date     | Description                                             |
|--------------|-------|----------|---------------------------------------------------------|
| 501/453 UNIV | G     | 14/09/07 | General Arrangement, Type 501/453 Universal Cable Gland |

This drawing is common to, and held with, IECEx BAS 06.0014X



**SUPPLEMENTARY EC - TYPE EXAMINATION CERTIFICATE**

**Equipment or Protective System Intended for use in Potentially Explosive Atmospheres  
Directive 94/9/EC**

- 3 Supplementary EC - Type Examination Certificate Number: **Baseefa06ATEX0057X/2**
- 4 Equipment or Protective System: **Type 501/453 UNIV Cable Gland**
- 5 Manufacturer: **Hawke International**
- 6 Address: **Oxford Street West, Ashton-under-Lyne, Lancashire, OL7 0NA**
- 7 This supplementary certificate extends EC – Type Examination Certificate No. Baseefa06ATEX0057X to apply to equipment or protective systems designed and constructed in accordance with the specification set out in the Schedule of the said certificate but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.

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Baseefa Customer Reference No. 0500

Project File No. 07/0769

This certificate is granted subject to the general terms and conditions of Baseefa. It does not necessarily indicate that the equipment may be used in particular industries or circumstances.

**Baseefa**

Rockhead Business Park, Staden Lane,  
Buxton, Derbyshire SK17 9RZ  
Telephone +44 (0) 1298 766600 Fax +44 (0) 1298 766601  
e-mail [info@baseefa.com](mailto:info@baseefa.com) web site [www.baseefa.com](http://www.baseefa.com)  
Baseefa is a trading name of Baseefa Ltd  
Registered in England No. 4305578. Registered address as above.

  
R S SINCLAIR  
DIRECTOR  
On behalf of  
Baseefa





---

13 **Schedule**

14 **Certificate Number Baseefa06ATEX0057X/2**

15 **Description of the variation to the Equipment or Protective System**

**Variation 2.1**

To allow the use of a modified entry component 3256 and an alternative middle nut 3257 on glands sizes Os to F, and a modified 3041 RAC clamping ring on the gland sizes Os/O and A.

16 **Report Number**

Baseefa Certification Report GB/BAS/ExTR008.0172/00

17 **Special Conditions for Safe Use**

None additional to those listed previously

18 **Essential Health and Safety Requirements**

Compliance with the Essential Health and Safety Requirements is not affected by this variation.

19 **Drawings and Documents**

| Number       | Issue | Date     | Description                          |
|--------------|-------|----------|--------------------------------------|
| 501/453 UNIV | G     | 14/09/07 | G.A of 501/453 Universal Cable Gland |

This drawing is common to IECEx BAS 06.0014X and is held with that certificate



1 **SUPPLEMENTARY EC - TYPE EXAMINATION CERTIFICATE**

2 **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres  
Directive 94/9/EC**

- 3 Supplementary EC - Type Examination Certificate Number: **Baseefa06ATEX0057X/3**
- 4 Equipment or Protective System: **501/453 Universal Cable Gland**
- 5 Manufacturer: **HAWKE International**
- 6 Address: **Oxford Street West, Ashton-under-Lyne, Lancashire, OL7 0NA**
- 7 This supplementary certificate extends EC - Type Examination Certificate No. Baseefa06ATEX0057X to apply to equipment or protective systems designed and constructed in accordance with the specification set out in the Schedule of the said certificate but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.

This supplementary certificate shall be held with the original certificate.

This certificate may only be reproduced in its entirety, without any change, schedule included.

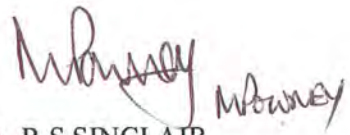
Baseefa Customer Reference No. **0500**

Project File No. **09/0174**

This certificate is granted subject to the general terms and conditions of Baseefa. It does not necessarily indicate that the equipment may be used in particular industries or circumstances.

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Rockhead Business Park, Staden Lane,  
Buxton, Derbyshire SK17 9RZ  
Telephone +44 (0) 1298 766600 Fax +44 (0) 1298 766601  
e-mail [info@baseefa.com](mailto:info@baseefa.com) web site [www.baseefa.com](http://www.baseefa.com)  
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R S SINCLAIR  
DIRECTOR  
On behalf of  
Baseefa



13

## Schedule

14

Certificate Number Baseefa06ATEX0057X/3

15 Description of the variation to the Equipment or Protective System

### Variation 1.1

To record changes in the sealing sizes of the Os size cable gland

16 Report Number

Baseefa Certification Report GB/BAS/Ex ExTR09/0164/00 held with IECEx BAS 06.0014X.

17 Special Conditions for Safe Use

None additional to those listed previously

18 Essential Health and Safety Requirements

Compliance with the Essential Health and Safety Requirements is not affected by this variation.

19 Drawings and Documents

| Number       | Issue | Date     | Description                        |
|--------------|-------|----------|------------------------------------|
| 501/453 UNIV | H     | 12/08/09 | G.A. 501/453 Universal Cable Gland |

This drawing is common to IECEx BAS 06.0014X and Baseefa09ATEX0233X and is held with the former.





**1 SUPPLEMENTARY EC - TYPE EXAMINATION CERTIFICATE**

**2 Equipment or Protective System Intended for use in Potentially Explosive Atmospheres  
Directive 94/9/EC**

**3 Supplementary EC - Type Examination Certificate Number: Baseefa06ATEX0057X/4**

**4 Equipment or Protective System: 501/453 Universal Cable Gland**

**5 Manufacturer: Hawke International (A Division of Hubbell Limited)**

**6 Address: Oxford Street West, Ashton-under-Lyne, Lancashire, OL7 0NA**

**7 This supplementary certificate extends EC – Type Examination Certificate No. Baseefa06ATEX0057X to apply to equipment or protective systems designed and constructed in accordance with the specification set out in the Schedule of the said certificate but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.**

This supplementary certificate shall be held with the original certificate.

This certificate may only be reproduced in its entirety, without any change, schedule included.

Baseefa Customer Reference No. 0500

Project File No. 09/0882

This certificate is granted subject to the general terms and conditions of Baseefa. It does not necessarily indicate that the equipment may be used in particular industries or circumstances.

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Rockhead Business Park, Staden Lane,  
Buxton, Derbyshire SK17 9RZ  
Telephone +44 (0) 1298 766600 Fax +44 (0) 1298 766601  
e-mail [info@baseefa.com](mailto:info@baseefa.com) web site [www.baseefa.com](http://www.baseefa.com)  
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**R S SINCLAIR**  
**DIRECTOR**  
On behalf of  
Baseefa

Re-issued to replace original



13

## Schedule

14

Certificate Number Baseefa06ATEX0057X/4

15 Description of the variation to the Equipment or Protective System

### Variant 4.1

To confirm that the equipment covered by this certificate has been reviewed against the requirements of EN 60079-1: 2007 in respect of the differences from the standards to which this certificate was issued; none of these differences affect this equipment.

16 Report Number

Baseefa Certification Report GB/BAS/ExTR09.0247/00

17 Special Conditions for Safe Use

None additional to those listed previously

18 Essential Health and Safety Requirements

Compliance with the Essential Health and Safety Requirements is not affected by this variation.

19 Drawings and Documents

| Number       | Issue | Date     | Description                          |
|--------------|-------|----------|--------------------------------------|
| 501/453 UNIV | J     | 10/12/09 | 501/453 Universal Gland - GA Drawing |

The above drawing is common to, and held with, IECEx BAS 06.0014X



**1 SUPPLEMENTARY EC - TYPE EXAMINATION CERTIFICATE**

**2 Equipment or Protective System Intended for use in Potentially Explosive Atmospheres  
Directive 94/9/EC**

**3 Supplementary EC - Type Examination Certificate Number: Baseefa06ATEX0057X/5**

**4 Equipment or Protective System: 501/453 Universal Cable Gland**

**5 Manufacturer: Hawke International (A Division of Hubbell Limited)**

**6 Address: Oxford Street West, Ashton-under-Lyne, Lancashire, OL7 0NA**

**7 This supplementary certificate extends EC – Type Examination Certificate No. Baseefa06ATEX0057X to apply to equipment or protective systems designed and constructed in accordance with the specification set out in the Schedule of the said certificate but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.**

This supplementary certificate shall be held with the original certificate.

This certificate may only be reproduced in its entirety, without any change, schedule included.

Baseefa Customer Reference No. **0500**

Project File No. **09/0338 and 10/0100**

This certificate is granted subject to the general terms and conditions of Baseefa. It does not necessarily indicate that the equipment may be used in particular industries or circumstances.

**Baseefa**

Rockhead Business Park, Staden Lane,  
Buxton, Derbyshire SK17 9RZ  
Telephone +44 (0) 1298 766600 Fax +44 (0) 1298 766601  
e-mail [info@baseefa.com](mailto:info@baseefa.com) web site [www.baseefa.com](http://www.baseefa.com)  
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R S SINCLAIR  
DIRECTOR  
On behalf of  
Baseefa

re-issued 26<sup>th</sup> August to correct standards





13

## Schedule

14

Certificate Number Baseefa06ATEX0057X/5

15 Description of the variation to the Equipment or Protective System

### Variant 5.1

To allow the introduction of an alternative backnut seal assembly. In addition the glands are considered to comply with the following standards and may be marked accordingly.

EN 60079-0: 2009, EN 60079-1: 2007, EN 60079-7: 2007, and EN 60079-31: 2009.

16 Report Number

Baseefa Certification Report GB/BAS/ExTR10.0287/00 held with IECEx BAS06.0013X

17 Special Conditions for Safe Use

None additional to those listed previously

18 Essential Health and Safety Requirements

Compliance with the Essential Health and Safety Requirements is not affected by this variation.

19 Drawings and Documents

| Number       | Issue | Date     | Description                          |
|--------------|-------|----------|--------------------------------------|
| 501/453 UNIV | K     | 30/06/10 | 501/453 Universal Gland - GA Drawing |

The above drawing is common to IECEx BAS 06.0014X and Baseefa09ATEX0233X and held with IECEx BAS 06.0014X



1 **SUPPLEMENTARY EC - TYPE EXAMINATION CERTIFICATE**

2 **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres  
Directive 94/9/EC**

3 Supplementary EC - Type Examination Certificate Number: **Baseefa06ATEX0057X/6**

4 Equipment or Protective System: **501/453 Universal Cable Gland**

5 Manufacturer: **Hawke International (A Division of Hubbell Limited)**

6 Address: **Oxford Street West, Ashton-under-Lyne, Lancashire, OL7 0NA**

7 This supplementary certificate extends EC – Type Examination Certificate No. Baseefa06ATEX0057X to apply to equipment or protective systems designed and constructed in accordance with the specification set out in the Schedule of the said certificate but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.

This supplementary certificate shall be held with the original certificate.

This certificate may only be reproduced in its entirety, without any change, schedule included.

Baseefa Customer Reference No. **0500**

Project File No. **11/0622**

This certificate is granted subject to the general terms and conditions of Baseefa. It does not necessarily indicate that the equipment may be used in particular industries or circumstances.

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Rockhead Business Park, Staden Lane,  
Buxton, Derbyshire SK17 9RZ  
Telephone +44 (0) 1298 766600 Fax +44 (0) 1298 766601  
e-mail [info@baseefa.com](mailto:info@baseefa.com) web site [www.baseefa.com](http://www.baseefa.com)  
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R S SINCLAIR  
DIRECTOR  
On behalf of  
Baseefa



13

## Schedule

14

Certificate Number Baseefa06ATEX0057X/6

### 15 Description of the variation to the Equipment or Protective System

#### Variant 6.1

To allow the introduction of an alternative dedicated armour clamping ring for braid screens or steel wire armour in place of the reversible armour clamping ring currently fitted.

In this form the glands would be stamped 501/453 'UNIV' 'X' or 'W' etc. depending on the type of ring fitted.

### 16 Report Number

Baseefa Certification Report GB/BAS/ExTR11.0199/00 held with IECEx BAS 06.0014X.

### 17 Special Conditions for Safe Use

None additional to those listed previously

### 18 Essential Health and Safety Requirements

Compliance with the Essential Health and Safety Requirements is not affected by this variation.

### 19 Drawings and Documents

| Number       | Issue | Date     | Description                          |
|--------------|-------|----------|--------------------------------------|
| 501/453 UNIV | L     | 16/08/11 | 501/453 Universal Gland - GA Drawing |

The above drawing is common to IECEx BAS 06.0014X and Baseefa09ATEX0233X and is held with IECEx BAS 06.0014X





1 **SUPPLEMENTARY EC - TYPE EXAMINATION CERTIFICATE**

2 **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres**  
**Directive 94/9/EC**

3 Supplementary EC - Type Examination Certificate Number: **Baseefa06ATEX0057X/7**

4 Equipment or Protective System: **501/453 Universal Cable Gland**

5 Manufacturer: **Hawke International (A Division of Hubbell Limited)**

6 Address: **Oxford Street West, Ashton-under-Lyne, Lancashire, OL7 0NA**

7 This supplementary certificate extends EC - Type Examination Certificate No. Baseefa06ATEX0057X to apply to equipment or protective systems designed and constructed in accordance with the specification set out in the Schedule of the said certificate but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.

This supplementary certificate shall be held with the original certificate.

This certificate may only be reproduced in its entirety, without any change, schedule included.

Baseefa Customer Reference No. **0500**

Project File No. **11/0741 and 11/0943**

This certificate is granted subject to the general terms and conditions of Baseefa. It does not necessarily indicate that the equipment may be used in particular industries or circumstances.

**Baseefa**

Rockhead Business Park, Staden Lane,  
Buxton, Derbyshire SK17 9RZ  
Telephone +44 (0) 1298 766600 Fax +44 (0) 1298 766601  
e-mail [info@baseefa.com](mailto:info@baseefa.com) web site [www.baseefa.com](http://www.baseefa.com)  
Baseefa is a trading name of Baseefa Ltd  
Registered in England No. 4305578. Registered address as above.

  
pp R S SINCLAIR M. POWNEY  
DIRECTOR  
On behalf of  
Baseefa



13

## Schedule

14

Certificate Number Baseefa06ATEX0057X/7

### 15 Description of the variation to the Equipment or Protective System

#### Variation 7.1

To allow the replacement of the 7<sup>o</sup> armour clamping components with 5<sup>o</sup> armour clamping components on gland sizes Os, O and A.

#### Variation 7.2

The introduction of a range of dedicated reversible armour clamping rings in this form the UNIV stamping will be followed by DED and W, X, Y or Z to indicate the type of armour that may be fitted

### 16 Report Number

Baseefa Certification Report GB/BAS/ExTR 11.0274/00 held with IECEx BAS06.0013X

### 17 Special Conditions for Safe Use

None additional to those listed previously

### 18 Essential Health and Safety Requirements

Compliance with the Essential Health and Safety Requirements is not affected by this variation.

### 19 Drawings and Documents

| Number               | Issue | Date     | Description                                                       |
|----------------------|-------|----------|-------------------------------------------------------------------|
| 501/453 UNIV and DED | M     | 16/08/11 | General arrangement 501/453 Universal Gland and Dedicated version |

This drawing is common to IECEx BAS 06.0014X and Baseefa09ATEX233X and is with the former.



1 **SUPPLEMENTARY EC - TYPE EXAMINATION CERTIFICATE**

2 **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres  
Directive 94/9/EC**

3 Supplementary EC - Type Examination Certificate Number: **Baseefa06ATEX0057X/8**

4 Equipment or Protective System: **501/453 Universal Cable Glands**

5 Manufacturer: **Hawke International (A Division of Hubbell Limited)  
(A Member of the Hubbell Group of Companies)**

6 Address: **Oxford Street West, Ashton-Under-Lyne, Lancashire, OL7 0NA**

7 This supplementary certificate extends EC – Type Examination Certificate No. Baseefa06ATEX0057X to apply to equipment or protective systems designed and constructed in accordance with the specification set out in the Schedule of the said certificate but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.

8 Item 9 of the original Certificate is replaced by "Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

**EN 60079-0:2012 EN 60079-1:2014 EN 60079-7:2007 EN 60079-31:2014**

except in respect of those requirements listed at item 18 of the Schedule."

9 The marking of the equipment has not changed from the original Certificate.

This certificate shall be held with the original certificate.

Baseefa Customer Reference No. **0500**

Project File No. **14/0889**

This document is issued by the Company subject to its General Conditions for Certification Services accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and the Supplementary Terms and Conditions accessible at <http://www.baseefa.com/terms-and-conditions.asp>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained herein reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. It does not necessarily indicate that the equipment may be used in particular industries or circumstances. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, schedule included, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

**SGS Baseefa Limited**

Rockhead Business Park, Staden Lane,  
Buxton, Derbyshire SK17 9RZ

Telephone +44 (0) 1298 766600 Fax +44 (0) 1298 766601

e-mail [info@baseefa.com](mailto:info@baseefa.com) web site [www.baseefa.com](http://www.baseefa.com)

Registered in England No. 4305578.

Registered address: Rossmore Business Park, Ellesmere Port, Cheshire, CH65 3EN

*R S Sinclair*  
R S SINCLAIR

GENERAL MANAGER

On behalf of SGS Baseefa Limited



13

## Schedule

14

Certificate Number Baseefa06ATEX0057X/8

15

### Description of the variation to the Equipment or Protective System

#### Variation 8.1

The 501/453 Universal glands as listed on the certificate are considered to comply with the latest standards: EN 60079-0:2012, EN 60079-1:2014, EN 60079-7:2007 and EN 60079-31:2014.

16

### Report Number

SGS Baseefa Report Number GB/BAS/ExTR14.0367/00 held with IECEx BAS 06.0013X.

17

### Specific Conditions of Use

None additional to those listed previously

18

### Essential Health and Safety Requirements

Compliance with the Essential Health and Safety Requirements is not affected by this variation.

19

### Drawings and Documents

None



# 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 06.0013X issue No.:9

Status: **Current**

Date of Issue: **2015-01-07** Page 1 of 4

Applicant: **Hawke International**  
A Division of Hubbell Ltd.  
A member of the Hubbell Group of Companies  
Oxford Street West, Ashton-under-Lyne  
Lancashire, OL7 0NA  
**United Kingdom**

### Certificate history:

Issue No. 9 (2015-1-7)  
Issue No. 8 (2013-10-22)  
Issue No. 7 (2012-11-2)  
Issue No. 6 (2012-3-14)  
Issue No. 5 (2011-6-21)  
Issue No. 4 (2009-9-17)  
Issue No. 3 (2008-10-1)  
Issue No. 2 (2007-4-26)

Electrical Apparatus: **A Range of Compression Type Cable Glands,**  
Optional accessory:

Type of Protection: **Ex d, Ex e, Ex tb**

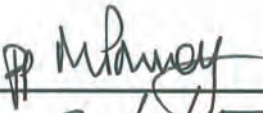
Marking: **Ex d IIC Ex e IIC Gb**  
**Ex tb IIIC Db IP66**  
**(- 60°C ≤ta ≤+ 100°C) see schedule**

Approved for issue on behalf of the IECEx Certification Body: **R S Sinclair**

Position: **General Manager**

Signature:  
(for printed version)

Date:

  
20/1/15

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**





# IECEx Certificate of Conformity

Certificate No.: IECEx BAS 06.0013X

Date of Issue: 2015-01-07

Issue No.: 9

Page 2 of 4

Manufacturer:

**Hawke International**  
A Division of Hubbell Ltd.  
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 electrical 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><br>Edition: 6.0    | Explosive atmospheres - Part 0: General requirements                                 |
| <b>IEC 60079-1 : 2014-06</b><br>Edition: 7.0 | Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"    |
| <b>IEC 60079-31 : 2013</b><br>Edition: 2     | Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t" |
| <b>IEC 60079-7 : 2006-07</b><br>Edition: 4   | Explosive atmospheres - Part 7: Equipment protection by increased safety "e"         |

*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:

GB/BAS/ExTR06.0011/00  
GB/BAS/ExTR10.0287/00  
GB/BAS/ExTR13.0242/00

GB/BAS/ExTR08.0173/00  
GB/BAS/ExTR11.0274/00  
GB/BAS/ExTR14.0367/00

GB/BAS/ExTR09.0165/00  
GB/BAS/ExTR12.0144/00

### Quality Assessment Report:

GB/BAS/QAR06.0061/04





# IECEx Certificate of Conformity

Certificate No.: IECEx BAS 06.0013X

Date of Issue: 2015-01-07

Issue No.: 9

Page 3 of 4

## Schedule

### EQUIPMENT:

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

A range of compression type cable glands manufactured in brass, stainless steel or aluminium. The glands may be supplied with metric or specified non-metric equivalent thread forms. These glands are intended for use with effectively filled circular cables. The cable type and/or cable protection/retention method is specific to each gland type designation – see annex for detail.

### CONDITIONS OF CERTIFICATION: YES as shown below:

1. Except for PSG glands, all glands are suitable for use within an operating temperature range of -60°C to +100°C. The PSG range of glands are limited to an operating temperature range of -60°C to +80°C.
2. When the glands are used for increased safety or dust protection the entry thread shall be suitably sealed (in accordance with IEC 60079-14) to maintain the ingress protection rating of the associated enclosure.
3. Except for the 501/421R glands, all glands for use with conduit, unarmoured or braided cables are only suitable for fixed installations, the cable for which must be effectively clamped to prevent pulling and twisting.
4. The type 8430-501/453 J M100 gland as per variation 2.1 may only be used for fixed cable installations of group II equipment. The user shall ensure that the cable is effectively clamped to prevent pulling and twisting.
5. When used in accordance with variation 8.1 the types 501/421 and 501/423 cable glands, with the exception of the type 501/421R, are only suitable for fixed applications and the cable must be effectively clamped and cleated to prevent pulling and twisting. The type 501/421/R has an integral clamping arrangement which precludes the requirement of this specific condition of use.
6. When used in accordance with variation 8.2 the types 501/453 RAC cable glands are only suitable for fixed applications and the cable must be effectively clamped and cleated to prevent pulling and twisting.



# IECEx Certificate of Conformity

Certificate No.: IECEx BAS 06.0013X

Date of Issue: 2015-01-07

Issue No.: 9

Page 4 of 4

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

### Variation 9.1

The range of glands with compression seals as listed on the certificate are considered to comply with the latest editions of the standards IEC 60079-0:2011 Edition 6, IEC 60079-1:2014 Edition 7, IEC 60079-7:2006 Edition 4 and IEC 60079-31:2013 Edition 2 together with clarification of the Specific Conditions for Safe Use.

ExTR: GB/BAS/ExTR14.0367/00

File Reference: 14/0889

Each of the following gland types may be manufactured in brass, stainless steel or aluminium and may be supplied with specified alternative entry thread forms.

**Variant 0.1      TYPE 501/421 CABLE GLAND**

The Type 501/421 Cable Gland is intended for use with an effectively filled and circular unarmoured cable and comprises the following components :-

- a. An entry component, in the size range Os to J (M16 to M100)
- b. A compressible sealing ring
- c. A compression spigot
- d. A back nut
- e. An optional earth continuity device for use with metallic sheathed cables

**Variant 0.1.1      Type 501/421 Size 2K Variant**

The Type 501/421 'Size 2K' gland comprises the following components only :-

- a. A dedicated entry component (M16)
- b. A compressible sealing ring
- c. A nylon skid washer
- d. A threaded compression spigot

**Variant 0.2      TYPE 501/423 CABLE GLAND**

The Type 501/423 Cable Gland is intended for use with an effectively filled and circular unarmoured cable and comprises the following components :-

- a. An entry component, in the size range Os to J (M16 to M100)
- b. Two compressible sealing rings
- c. Two compression spigots
- d. A middle nut
- e. A back nut
- f. An optional earth continuity device for use with metallic sheathed cables

**Variant 0.3      TYPE 501/453 RAC CABLE GLAND**

The Type 501/453 RAC Cable Gland is intended for use with an effectively filled and circular armoured or braided cable and comprises the following components :-

- a. An entry component, in the size range Os to F (M16 to M75)
- b. A compressible sealing ring
- c. A combined compression spigot and armour clamping cone
- d. A reversible armour clamping ring
- e. A middle nut
- f. An outer seal assembly (sleeve seal and support ring)
- g. A back nut
- h. An optional earth continuity device for use with metallic inner sheathed cables

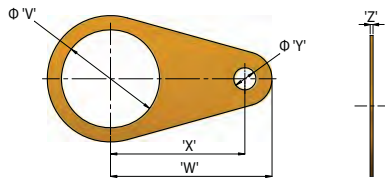
**Variant 0.4      TYPE 501/453 CABLE GLAND**

The Type 501/453 Cable Gland is intended for use with an effectively filled and circular armoured or braided cable and comprises the following components :-

- a. An entry component, in the size range Os to J (M16 to M100)
- b. A compressible sealing ring
- c. A combined compression spigot and armour clamping cone
- d. A dedicated armour, or braid, clamping ring
- e. A middle nut
- f. An outer seal assembly (sleeve seal and support ring [Os-F] or compression ring [G-J])
- g. A back nut
- h. An optional earth continuity device for use with metallic inner sheathed cables



## Earth Tags



SELECTION TABLE

| Metric Gland Size 'V' | 'Y'  | 'W'   | 'X'   | 'Z' |
|-----------------------|------|-------|-------|-----|
| M20                   | 7.0  | 39.6  | 33.1  | 1.6 |
| M25                   | 10.5 | 45.5  | 36.5  | 1.6 |
| M32                   | 12.2 | 52.0  | 40.9  | 1.6 |
| M40                   | 13.6 | 59.6  | 44.2  | 1.6 |
| M50                   | 13.5 | 78.9  | 58.1  | 1.6 |
| M63                   | 13.5 | 87.6  | 66.8  | 1.6 |
| M75                   | 13.5 | 93.7  | 72.9  | 1.6 |
| M80                   | 14.0 | 128.0 | 104.0 | 3.0 |
| M90                   | 14.0 | 128.0 | 104.0 | 3.0 |
| M100                  | 14.0 | 128.0 | 104.0 | 3.0 |

All dimensions in millimetres.

## Application

- Provides an earth bond attachment for a cable gland.

## Features

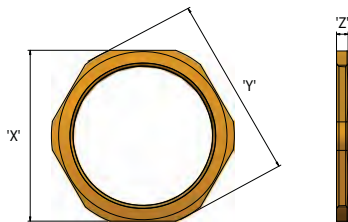
- Manufactured in Brass (standard).
- Stainless Steel earthtags are available, but dimensions may differ slightly to those stated in the selection table. Please contact Hawke Technical Sales for details.

## Ordering Information

Format for ordering is as follows:

| Type     | Size / Thread |
|----------|---------------|
| Earthtag | M25           |

## Locknut



SELECTION TABLE

| Metric x 1.5mm Pitch |                  |                    |      | NPT              |                  |                    |     |
|----------------------|------------------|--------------------|------|------------------|------------------|--------------------|-----|
| Metric Gland Size    | Across Flats 'X' | Across Corners 'Y' | 'Z'  | NPT * Gland Size | Across Flats 'X' | Across Corners 'Y' | 'Z' |
| M16                  | 19.0             | 21.9               | 3.2  | -                | -                | -                  | -   |
| M20                  | 24.0             | 26.9               | 4.0  | ½"               | 30.0             | 33.6               | 4.7 |
| M20                  | 24.0             | 26.9               | 4.0  | ¾"               | 30.0             | 33.6               | 4.7 |
| M25                  | 30.0             | 33.6               | 4.0  | 1"               | 36.0             | 40.3               | 6.4 |
| M32                  | 46.0             | 53.1               | 4.0  | 1¼"              | 46.0             | 53.1               | 6.4 |
| M40                  | 46.0             | 53.1               | 4.8  | 1½"              | 55.0             | 61.6               | 6.4 |
| M50                  | 65.0             | 72.8               | 4.7  | 2"               | 65.0             | 72.8               | 6.4 |
| M63                  | 80.0             | 89.6               | 6.4  | 2½"              | 80.0             | 89.6               | 6.4 |
| M75                  | 95.0             | 107.0              | 6.4  | 3"               | 95.0             | 107.0              | 6.4 |
| M80 <sup>1</sup>     | 106.4            | 119.2              | 10.0 | 3½"              | 127.0            | 143.0              | 9.0 |
| M90 <sup>1</sup>     | 106.4            | 119.2              | 10.0 | 3½"              | 127.0            | 143.0              | 9.0 |
| M100 <sup>1</sup>    | 127.0            | 142.2              | 10.0 | 4"               | 139.7            | 158.0              | 9.0 |

All dimensions in millimetres (except \* where dimensions are in inches).

## Application

- Secures a cable gland in position at the equipment.

## Features

- Heavy duty locknuts manufactured in Brass (standard).
- Stainless Steel locknuts are available, but dimensions may differ slightly to those stated in the selection table. Please contact Hawke Technical department for details.

## Ordering Information

Format for ordering is as follows:

| Type    | Size / Thread |
|---------|---------------|
| Locknut | M25           |

Light Fitting & Light  
Switch Certificates  
Manual/Heater



**INSTALLATION OPERATION AND  
MAINTENANCE INSTRUCTIONS FOR  
HEATEX FAW, FAW-C, AND STW TYPE AIR  
WARMERS, FCR TYPE CONVECTORS AND  
HFT TYPE AIR THERMOSTATS**

**Please read these instructions thoroughly before installation and ensure they are  
passed on to the end-user**



## 1.0 GENERAL

- 1.1 All work should be carried out by suitable qualified personnel.
- 1.2 Equipment must be handled with care and stored in dry conditions.
- 1.3 **CAUTION** - FCR convectors and airwarmers over 1m long are **HEAVY** and must be handled appropriately.
- 1.4 These heaters are designed for industrial use only and additional personnel protection against contact with hot surfaces may be required in some installations.
- 1.5 Carefully remove all protective packaging and visually inspect unit for any transit damage.
- 1.6 FAW and FAW-C - note that the heating elements should be parallel and equi-spaced within the guard.
- 1.7 Before connection ensure that the supply corresponds with that specified on the rating label.
- 1.8 Ensure that the sizes and types of cables to be used are suitably rated for the load and temperature of the unit.
- 1.9 Each heater must be protected by a suitably rated over current device.
- 1.10 All prevailing rules, regulations and bylaws in force at the time and place of installation must be observed.
- 1.11 The heater should be securely fixed in position and all terminal connections checked for tightness before energising.
- 1.12 Any modification not carried out by Heatex Limited or its approved agent will invalidate certification and warranty.

## 2.0 INSTALLATION

- 2.1 The installer or end user shall ensure that the unit has free and unrestricted airflow to allow natural convection to occur at all times. **DO NOT COVER OR REST ANYTHING ON THE HEATER.**
- 2.2 FAW and FAW-C heaters - at no time is the ambient temperature to be allowed to rise above 40° C (T3 & T4 rated units) or 60° C (T2 rated units). This shall be achieved by end user installation (suggested method – flameproof room thermostat – Heatex model HFT).
- 2.3 STW heaters may be regulated by a Heatex industrial thermostat (separate or integral).
- 2.4 Orientation of heater must be strictly adhered to ('TOP' label to be on top).
- 2.5 **WARNING** – air warmers must at no time be covered during operation, as this could lead to dangerous overheating and will invalidate the hazardous area certification.

## 3.0 ELECTRICAL SUPPLY CONNECTION

- 3.1 Please refer to the wiring diagram *figs 1 to 5*.
- 3.2 The cable entry is positioned on the side of the terminal box.

- 3.3 The cables must enter the FAW, FAW-C or FCR heater terminal box via a certified EEx e or EEx d cable gland (not supplied) and enter the HFT terminal box via a certified EEx d cable gland (not supplied) to suit the cable and be fitted by a qualified person.
- 3.4 The installer or end user must only connect to the Heatex supplied terminals within the terminal box - DO NOT connect to or disturb factory fitted heating element wiring.
- 3.5 HFT thermostats – the spigot flame path surfaces must be checked to ensure that they are undamaged and the ‘o’ ring must be fully located in its groove before re-fitting the cover.
- 3.6 The cover of the HFT terminal box is removed after releasing the 3 socket head screws in the cover. When re-fitting ensure that the ‘o’ ring seal is in good condition and correctly located. The main cover mating and spigot faces MUST be kept clean and free from any debris at all times.
- 3.7 After re-fitting, the gap between the cover and the body of the HFT terminal box must be checked to ensure that it does not exceed 0.15mm.

#### **4.0 EARTH CONNECTION**

- 4.1 The external earth connection (hazardous area units only) is located underneath the protective guard of the FAW, FAW-C and FCR in the same orientation as the elements and on the corner of the HFT terminal box.
- 4.2 The internal earth connection is to one end of the terminal rail (FAW and FAW-C) or via a pillar (STW and HFT) inside the terminal box.

#### **5.0 OPERATION**

- 5.1 Once energized the Air Warmer will continue to operate until de-energised by an external control device (available separately).
- 5.2 The FAW and FAW-C Air Warmers and FCR Convector are designed to operate in ambient temperatures of up to 40° C (T3 & T4 rated units) or 60° C (T2 rated units) and the user must ensure that this is not exceeded at any time.
- 5.3 The STW Air Warmers are designed to operate in ambient temperatures of up to 60°C. Where an integral adjustable thermostat is provided, this senses ambient air temperature. Rotate the control clockwise to increase the set-point or anticlockwise to reduce the set-point.
- 5.3 Where an integral adjustable thermostat is provided with the HFT, rotate the control clockwise to increase the set-point or anticlockwise to reduce the set-point.

#### **6.0 MAINTENANCE**

- 6.1 All prevailing site safety regulations shall be adhered to at all times.
- 6.2 Before and whilst any maintenance activity is carried out, it must be ensured that there are no hazardous gases present.
- 6.3 Equipment is to be fully isolated from the electrical supply before and whilst any work is being carried out.
- 6.4 Any damage or faults should be notified to Heatex Limited immediately.

- 6.5 Any replacement parts required must be obtained directly from Heatex. The use of any other parts will void any certification and warranty
- 6.6 For equipment certified for use in hazardous areas reference should be made to EN60079-17 (especially table 1) in addition to the following recommendations:

**6.6.1 3 Monthly**

- a. Generally inspect the equipment for external damage.
- b. Ensure that the spaces between the element fins remain clear and that the airflow remains unrestricted.

**6.6.2 6 Monthly**

- a. Isolate the electrical supply and remove the cover.
- b. Internals should be clean and dry.
- c. Ensure terminals are intact and secure.
- d. Heating element insulation resistance to be at least 2 megohm.
- e. Refit cover with new gasket or 'o' ring if required.
- f. HFT only – check the flamepath gap as 3.7 above.
- g. Earth continuity must be maintained between all points and the main structure.

**6.6.2 Annually**

- a. Carry out 3 monthly and 6 monthly check as above.
- b. Check for element failure or low insulation resistance.

- 6.7 FAW and FAW-C heaters - only Heatex Ltd or its approved agent to carry out heating element replacement otherwise the Hazardous Area certification will be invalidated.

- 6.8 If heaters are being left unused for a period greater than 3 months, carry out 6 monthly maintenance before energising.

**7.0 Marking & certification reference**

- 7.1 FAW, FAW-C and FCR

 II 2 G

EEx e II T(2, 3 or 4 depending on model)

LCIE 00 ATEX 6013 X

- 7.2 HFT

 II 2 G/D

EEx d IIC T6 IP6X T85°C

LCIE 99 ATEX 6017 X



Fig.1

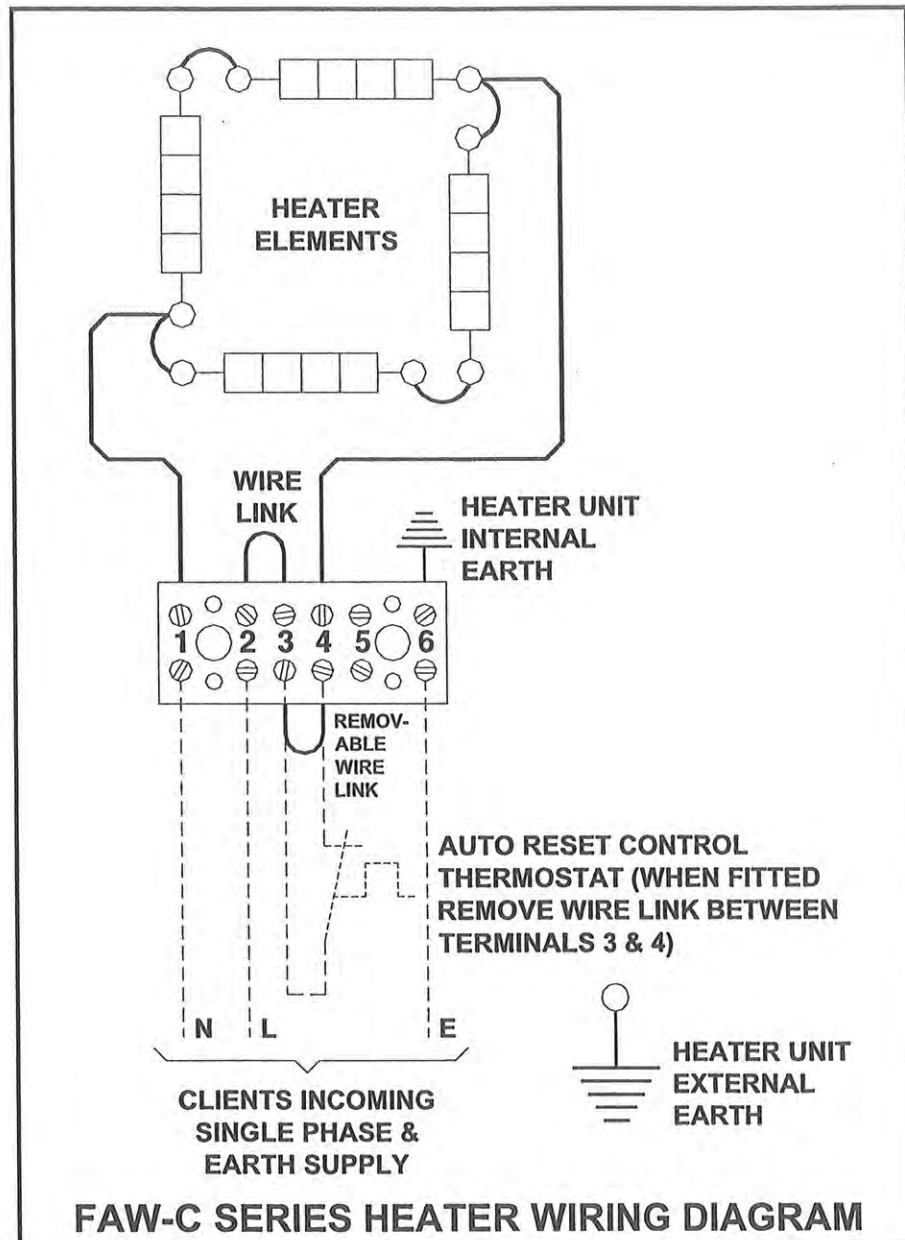


Fig 2.

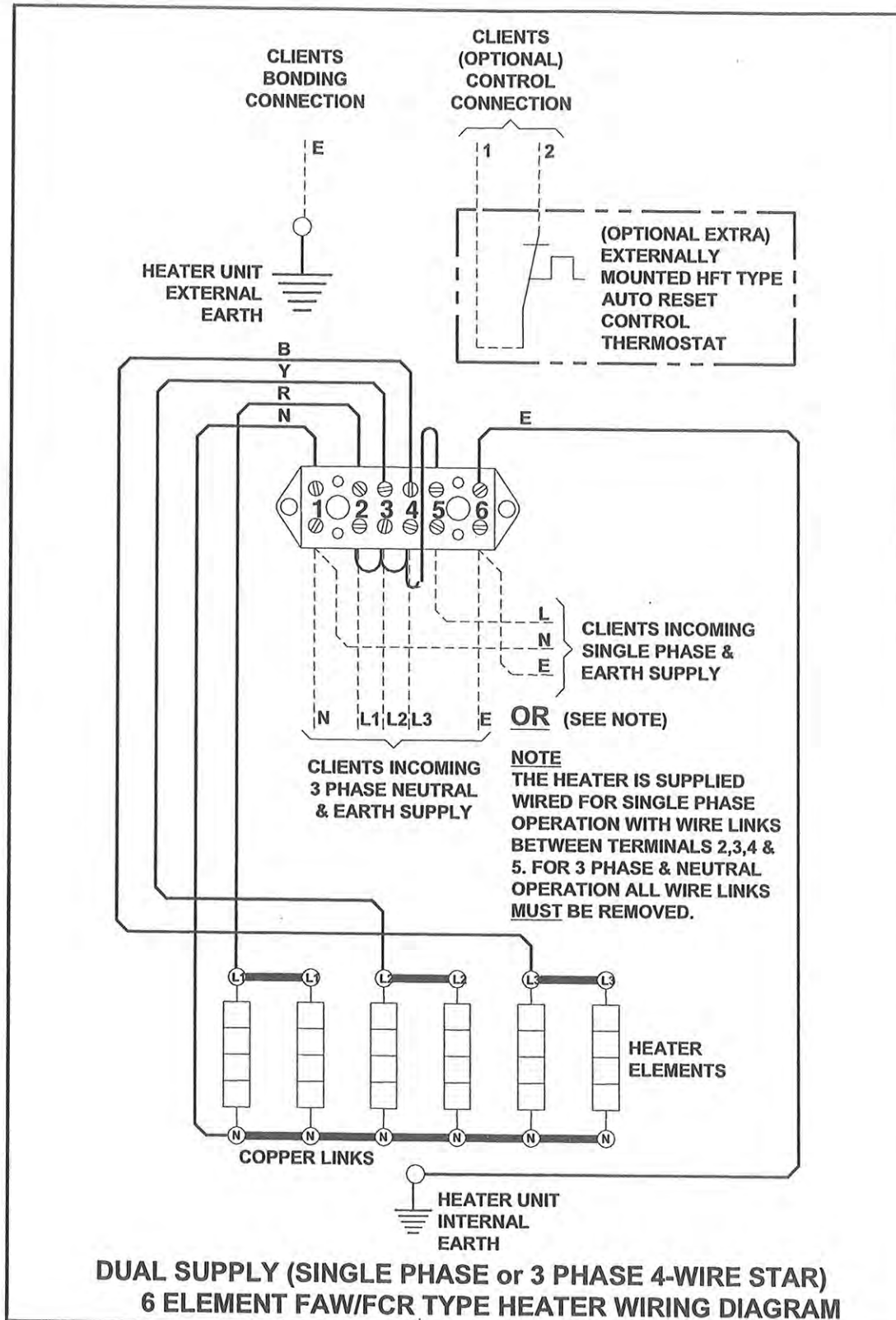


Fig 3.

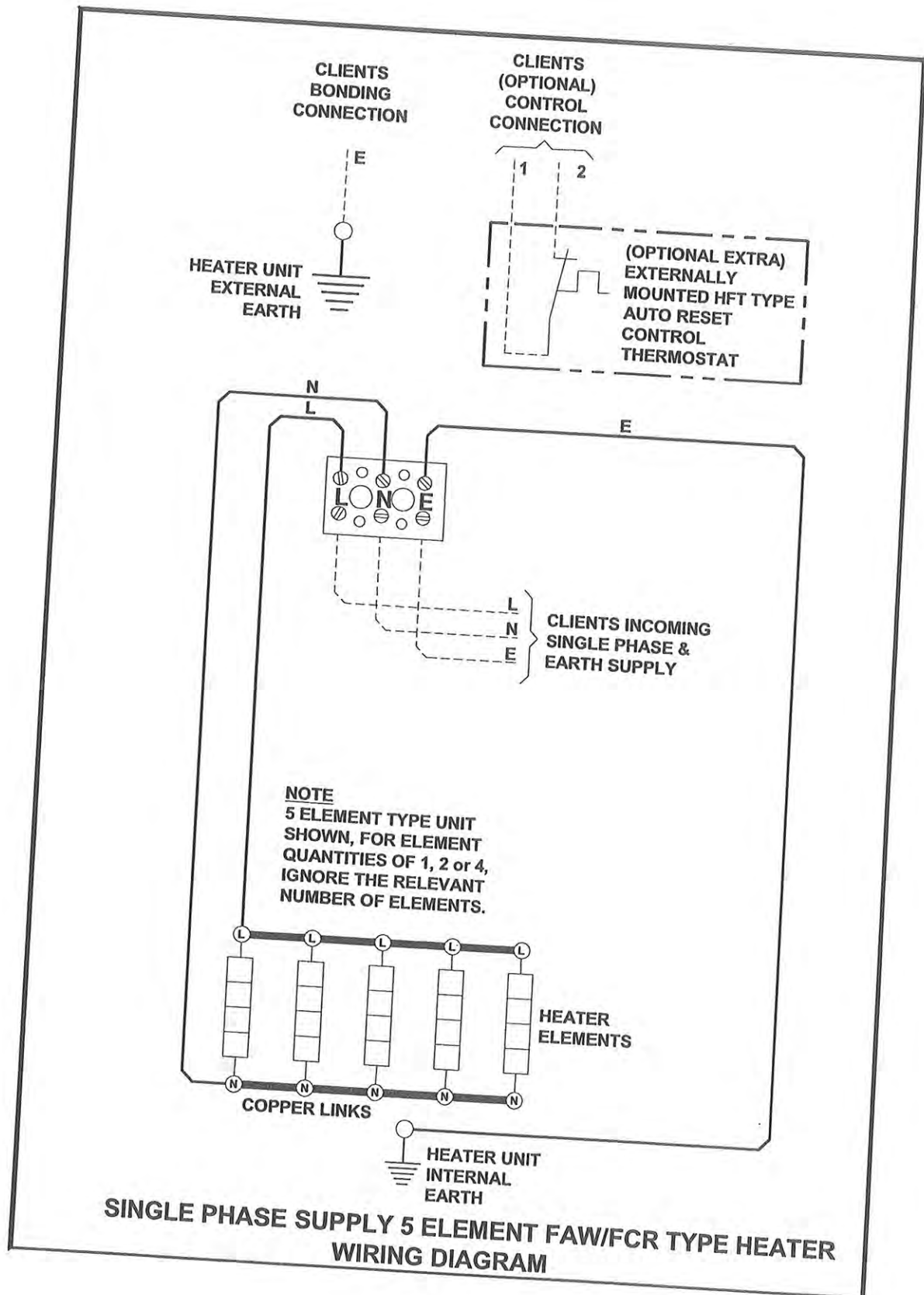




Fig 4.

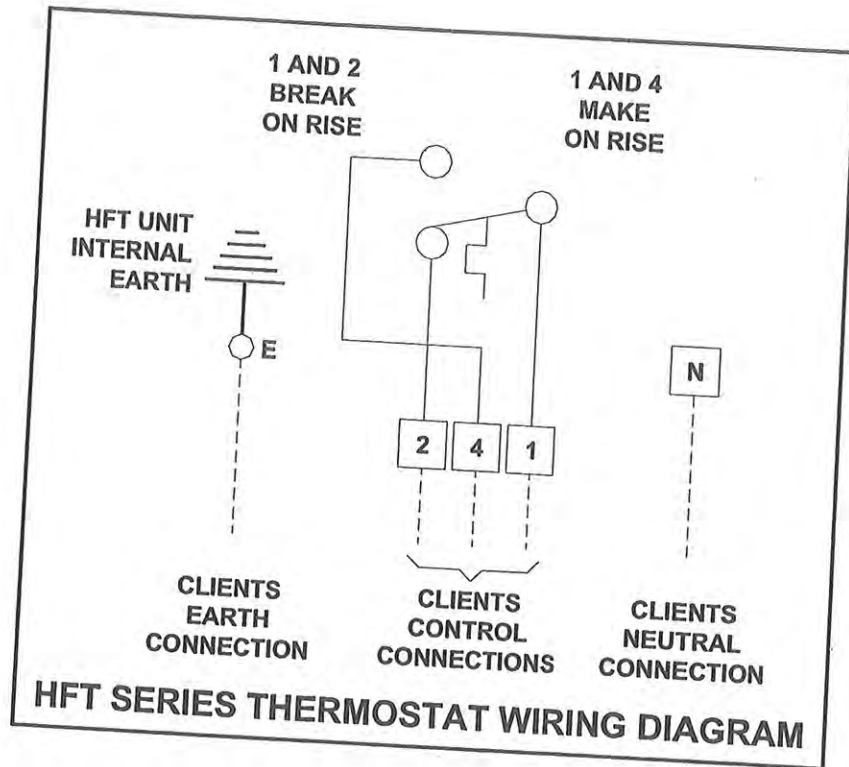


Fig 5.

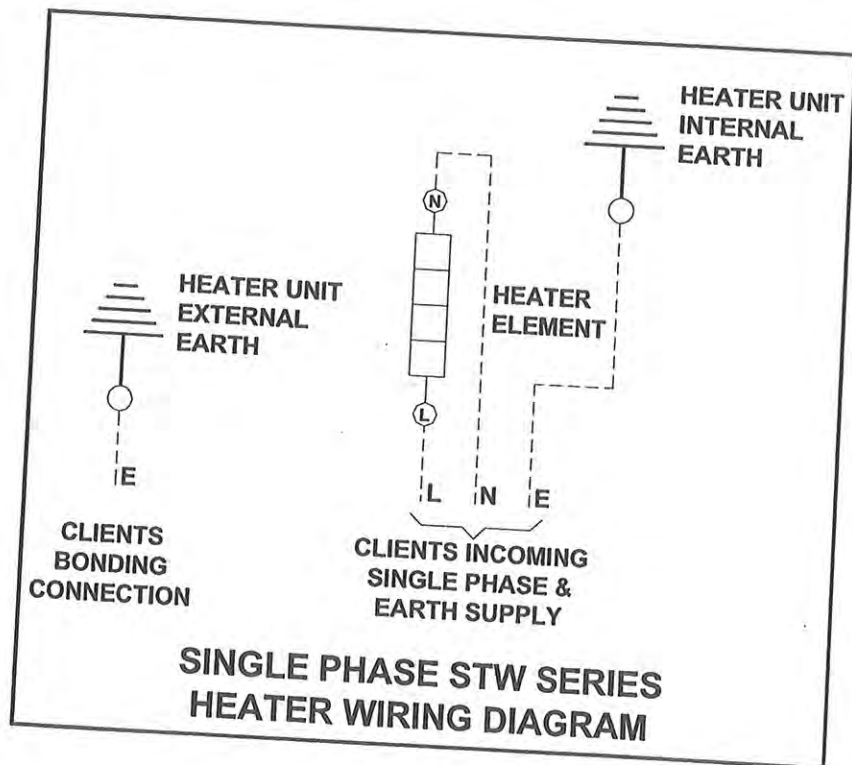
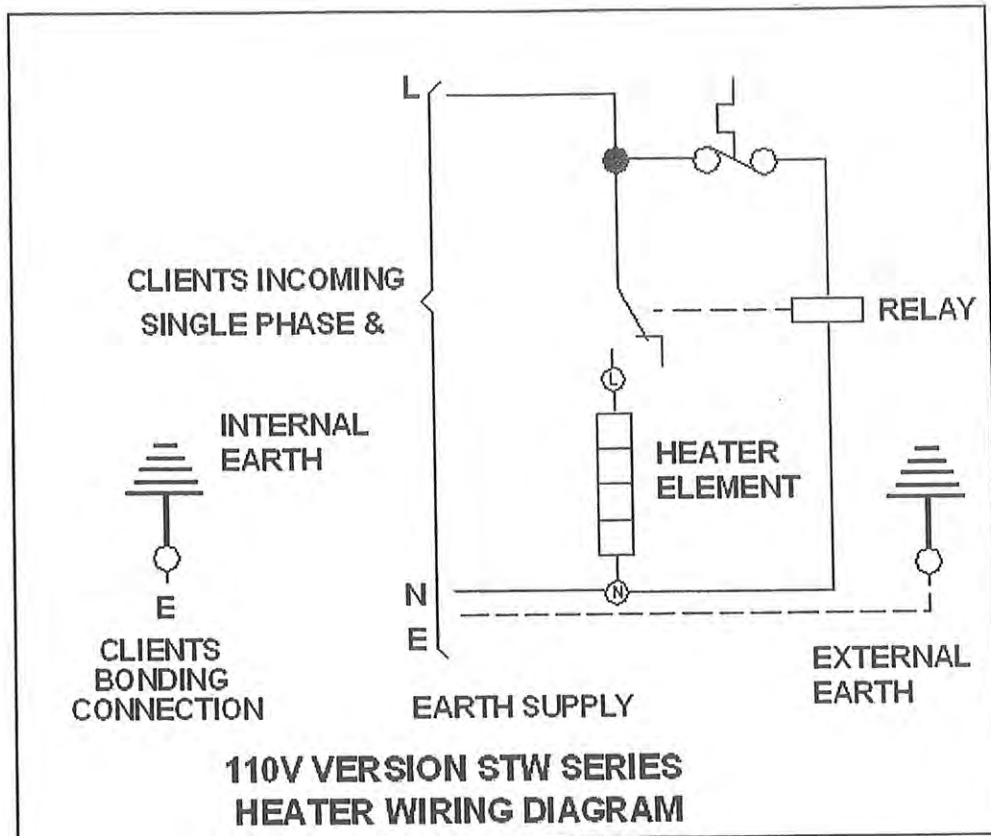


Fig 6.



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1 **ATTESTATION D'EXAMEN CE DE TYPE**

2 Appareils et systèmes de protection destinés à être utilisés en atmosphères explosibles  
Directive 94/9/CE

3 Numéro de l'attestation CE de type  
LCIE 00 ATEX 6013 X

4 Appareil ou système de protection

Appareil de chauffage  
Type : FAW

5 Demandeur : HEATEX LIMITED

6 Adresse : Threxton Road Industrial Estate  
Watton, Thetford, Norfolk, IP25 6NG  
UNITED KINGDOM

7 Cet appareil ou système de protection et ses variantes éventuelles acceptées est décrit dans l'annexe de la présente attestation et dans les documents descriptifs cités en annexe.

8 Le LCIE, organisme notifié sous la référence 0081 conformément à l'article 9 de la directive 94/9/CE du Parlement européen et du Conseil du 23 mars 1994, certifie que cet appareil ou système de protection est conforme aux exigences essentielles en ce qui concerne la sécurité et la santé pour la conception et la construction d'appareils et de systèmes de protection destinés à être utilisés en atmosphères explosibles, données dans l'annexe II de la directive. Les vérifications et épreuves figurent dans notre rapport confidentiel N° 21 455 010.

9 Le respect des exigences essentielles en ce qui concerne la sécurité et la santé est assuré par la conformité aux documents suivants :  
- EN 50014 (1992)  
- EN 50019 (1994)

10 Le signe X lorsqu'il est placé à la suite du numéro de l'attestation, indique que ce matériel ou système de protection est soumis aux conditions spéciales pour une utilisation sûre, mentionnées dans l'annexe de la présente attestation.

11 Cette attestation d'examen CE de type concerne uniquement la conception et la construction de l'appareil ou du système de protection spécifié, conformément à la directive 94/9/CE. Des exigences supplémentaires de cette directive sont applicables pour la fabrication et la fourniture de l'appareil ou du système de protection.

12 Le marquage de l'appareil ou du système de protection devra comporter, entre autres indications utiles, les mentions suivantes :

II 2 G  
EEx e II T4 à T2

1 **EC TYPE EXAMINATION CERTIFICATE**

2 Equipment or Protective System Intended for use in Potentially explosive atmospheres  
Directive 94/9/CE

3 EC type Examination Certificate number  
LCIE 00 ATEX 6013 X

4 Equipment or Protective system

Heater  
Type : FAW

5 Applicant : HEATEX LIMITED

6 Address : Threxton Road Industrial Estate  
Watton, Thetford, Norfolk, IP25 6NG  
UNITED KINGDOM

7 This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

8 LCIE, notified body number 0081 in accordance with article 9 of the directive 94/9/CE of the European Parliament and Council of 23 March 1994, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective system intended for use in potentially explosive atmospheres, given in Annex II to the directive. The examination and test results are recorded in confidential report No 21 455 010

9 Compliance with the Essential Health and Safety Requirements has been assured by compliance with :  
- EN 50014 (1992)  
- EN 50019 (1994)

10 If the sign X is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.

11 This EC Type examination certificate relates only to the design and construction of this specified equipment or protective system in accordance with the Directive 94/9/EC. Further requirements of Directive applies to the manufacture and supply of this equipment or protective system.

12 The marking of the equipment or protective system shall include the following :

II 2 G  
EEx e II T4 to T2

Fontenay-aux-Roses, le 23 juin 2000

Le Directeur de l'organisme certificateur  
Manager of the certification body

Timbre sec/dry seal

Par délégation  
Michel BRÉNON  
Directeur adjoint  
à la Certification

Page 1/2 13-b

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**LABORATOIRE CENTRAL DES INDUSTRIES ELECTRIQUES**

Société anonyme à Directoire et Conseil de surveillance au capital de 103 592 000 Francs - RCS Nanterre B 408 363 174

Siège social : 33, avenue du Général Leclerc - F 92260 Fontenay-aux-Roses - Tél. : +33 (0)1 40 95 60 60

# **HEATEX LTD**

**Threxton Road Industrial Estate**

**Watton, Thetford, IP25 6NG**

**Tel: +44 (0)1953 886200**

**Fax: +44 (0)1953 886222**

**For sales and new product information see our website  
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**73/23/EEC**

**89/336/EEC**

**94/9/EC (Excluding STW)**

**Stock Code S90.00.00.14**

**Issue F**





(A1) ANNEXE

(A2) ATTESTATION D'EXAMEN CE DE TYPE

LCIE 00 ATEX 6013 X

(A3) Description de l'équipement ou du système de protection

L'appareil de chauffage type FAW, de tension nominale jusqu'à 660 V et de puissance nominale jusqu'à 4 kW, comprend une boîte de raccordement avec un montage de protection et jusqu'à 6 éléments chauffants métalliques.

L'appareil est construit en 2 versions :

- version "normale",
- version "compact".

Le marquage sera le suivant :

HEATEX LIMITED

Adresse

Type : FAW

N° de fabrication

Année de fabrication

 II 2 G

EEx e II T4 à T2

LCIE 00 ATEX 6013 X

Ne pas ouvrir sous tension

Caractéristiques électriques

Le marquage CE est accompagné du numéro d'identification de l'organisme notifié responsable de la surveillance du système de qualité (0081 pour le LCIE).

(A4) Documents descriptifs

Dossier technique du Rév. 1 du 24/05/2000.

Ce document comprend 7 rubriques (8 pages).

(A5) Conditions spéciales pour une utilisation sûre

- Conditions d'alimentation :

. Version "normale" : 4 kW par élément ou tension polyphasée jusqu'à 660 V

. Version "compact" : 4 kW par élément ou tension polyphasée jusqu'à 550 V

- Classement en température :

. Version "normale" : pour une puissance maximale à la surface de l'élément de 3,01 W/cm<sup>2</sup> à sa tension nominale :

T3 jusqu'à + 40 °C

T2 jusqu'à + 60 °C

. Version "compact" : pour une puissance maximale à la surface de l'élément de 1,1 W/cm<sup>2</sup> à sa tension nominale :

T3 jusqu'à + 40 °C

T2 jusqu'à + 60 °C

(A6) Exigences essentielles en ce qui concerne la sécurité et la santé

La conception de cet équipement satisfait aux normes européennes EN 50014 et EN 50019.

Epreuve individuelle :

Chaque exemplaire du matériel devra subir une épreuve de rigidité diélectrique conformément aux dispositions du paragraphe 7 de la norme EN 50019.

(A1) SCHEDULE

(A2) EC TYPE EXAMINATION CERTIFICATE

LCIE 00 ATEX 6013 X

(A3) Description of Equipment or Protective System

The type FAW heater, rated at up to 660 V and 4 kW, comprises a terminal enclosure with integral mounting frame and guard and up to 6 finned tubular metal heating elements.

The equipment is manufactured in 2 models :

- "normal" model,
- "compact" model.

The marking will be the following :

HEATEX LIMITED

Address

Type : FAW

Serial number

Year of construction :

 II 2 G

EEx e II T4 to T2

LCIE 00 ATEX 6013 X

Do not open while energized

Electrical characteristics.

The CE marking shall be accompanied by the identification number of the notified body responsible for surveillance of the quality system (0081 for the LCIE).

(A4) Descriptive documents :

Technical file Rev. 1 dated 24/05/2000.

This file includes 7 items (8 pages).

(A5) Special conditions for safe use

- Power rating :

. "Normal" model : 4 kW single or polyphase up to 660 V

. "Compact" model : 4 kW single or polyphase up to 550 V

- Temperature classification :

. "Normal" model : based on a maximum power density at the element surface of 3,01 W/cm<sup>2</sup> at its rated voltage :

T3 up to + 40 °C

T2 up to + 60 °C

. "Compact" model : based on a maximum power density at the element surface of 1,1 W/cm<sup>2</sup> at its rated voltage :

T3 up to + 40 °C

T2 up to + 60 °C

(A6) Essential Health and Safety Requirements

The design of the equipment complies to European standards EN 50014 and EN 50019.

Routine test :

Each single electrical apparatus must be submitted to a dielectric strength test as set forth by the dispositions of paragraph 7 of EN 50019 standard.



(A1) ATTESTATION D'EXAMEN CE DE TYPE  
LCIE 00 ATEX 6013 X du 23 juin 2000

AVENANT 00 ATEX 6013 X/01



(A1) EC TYPE EXAMINATION CERTIFICATE  
LCIE 00 ATEX 6013 X dated June 23, 2000

VARIATION 00 ATEX 6013 X/01

(A2) DÉSIGNATION DE L'ÉQUIPEMENT OU DU  
SYSTÈME DE PROTECTION :

Appareil de chauffage  
Types : FAW et FCR  
Construit par : HEATEX LIMITED

(A2) NAME OF EQUIPMENT OR PROTECTIVE SYSTEM :

Heater  
Type : FAW et FCR  
Manufactured by : HEATEX LIMITED

(A3) OBJET DE L'AVENANT, DESCRIPTION DE  
L'APPAREIL OU DU SYSTÈME DE PROTECTION :

- Création du type FCR.

Marquage : Inchangé. Complété par le type FCR.

(A3) SUBJECT OF THE VARIATION, DESCRIPTION OF  
EQUIPMENT OR PROTECTIVE SYSTEM :

- Creation of FCR type.

Marking : Unchanged. Completed by FCR type.

(A4) DOCUMENTS DESCRIPTIFS :

Dossier technique Rév. 1 du 08/06/2001.  
Ce dossier comprend 4 rubriques (5 pages).

(A4) DESCRIPTIVE DOCUMENTS :

Technical file Rev. 1 dated 08/06/2001.  
This file includes 4 items (5 pages).

(A5) CONDITIONS SPÉCIALES POUR UNE UTILISATION  
SÛRE :

Inchangées.

(A5) SPECIAL CONDITIONS FOR SAFE USE :

Unchanged.

(A6) EXIGENCES ESSENTIELLES EN CE QUI  
CONCERNE LA SÉCURITÉ ET LA SANTÉ :

Inchangées.

(A6) ESSENTIAL HEALTH AND SAFETY  
REQUIREMENTS :

Unchanged.

Fontenay-aux-Roses, le 27 juillet 2001

Le Directeur de l'organisme certificateur  
Manager of the certification body

Timbre sec/Dry seal

Par délégation  
Michel BRÉNON  
Directeur adjoint  
à la Certification

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Société anonyme à Directoire et Conseil de surveillance au capital de 15 745 984 euros - RCS Nanterre B 408 363 174

33, avenue du Général Leclerc - BP n° 8 - F 92266 FONTENAY-AUX-ROSES CEDEX - Tél. : +33 1 40 95 60 60



(A1) ATTESTATION D'EXAMEN CE DE TYPE  
LCIE 00 ATEX 6013 X du 23 Juin 2000.

AVENANT 00 ATEX 6013X/02

(A2) DESIGNATION DE L'EQUIPEMENT OU DU  
SYSTEME DE PROTECTION :

Appareil de chauffage  
Type : FAW, FCR  
Construit par : HEATEX LIMITED

(A3) OBJET DE L'AVENANT, DESCRIPTION DE  
L'APPAREIL OU DU SYSTÈME DE PROTECTION :

Abaissement de la température minimale d'utilisation  
à -60°C.

Le marquage est inchangé.

(A4) DOCUMENTS DESCRIPTIFS :

Dossier technique n° 2004-17-TF rév. 3 du 20 Avril 2004.

Ce dossier comprend 2 rubriques (3 pages).

(A5) CONDITIONS SPECIALES POUR UNE  
UTILISATION SURE :

Le classement en température est modifié comme suit :

| Version /<br>Model    | Puissance maximale à la surface de<br>l'élément à sa tension nominale /<br>Maximal power of the element at surface<br>under nominal voltage | Température ambiante<br>d'utilisation /<br>Ambient operating<br>temperature | Classement en<br>température /<br>Temperature<br>classification |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|-----------------------------------------------------------------|
| Normale /<br>Normal   | 3,01 W/cm <sup>2</sup>                                                                                                                      | - 60 °C ≤ T <sub>amb</sub> ≤ + 40°C                                         | T3                                                              |
|                       | 1,35 W/cm <sup>2</sup>                                                                                                                      | - 60 °C ≤ T <sub>amb</sub> ≤ + 60°C                                         | T2                                                              |
| Compacte /<br>Compact | 1,1 W/cm <sup>2</sup>                                                                                                                       | - 60 °C ≤ T <sub>amb</sub> ≤ + 40°C                                         | T4                                                              |
|                       |                                                                                                                                             | - 60 °C ≤ T <sub>amb</sub> ≤ + 60°C                                         | T3                                                              |

(A6) EXIGENCES ESSENTIELLES EN CE QUI  
CONCERNE LA SECURITE ET LA SANTE :

Inchangées.

(A1) EC TYPE EXAMINATION CERTIFICATE  
LCIE 00 ATEX 6013 X dated June 23<sup>rd</sup>, 2000.

VARIATION 00 ATEX 6013X/02

(A2) NAME OF EQUIPMENT OR PROTECTIVE SYSTEM :

Heater  
Type : FAW, FCR  
Manufactured by : HEATEX LIMITED

(A3) SUBJECT OF THE VARIATION, DESCRIPTION OF  
EQUIPMENT OR PROTECTIVE SYSTEM :

Lowering of the minimal operating temperature  
to -60°C.

The marking is unchanged.

(A4) DESCRIPTIVE DOCUMENTS :

Certification file No. 2004-17-TF rev. 3 dated April 20<sup>th</sup>,  
2004.

This file includes 2 items (3 pages).

(A5) SPECIAL CONDITIONS FOR SAFE USE :

The temperature classification is modified as follows .

(A6) ESSENTIAL HEALTH AND SAFETY  
REQUIREMENTS :

Unchanged.

Fontenay-aux-Roses, le 30 septembre 2004

Le Directeur de l'organisme certificateur  
Manager of the certification body

Michel BRÉNON

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LCIE

33 av. du Général Leclerc

Tel : +33 1 40 95 60 60

Société Anonyme

Laboratoire Central

BP 8

Tax : +33 1 40 95 80 56

au capital de 15 745 981 €

des Industries Electriques

92200 Fontenay-aux-Roses Cedex

contact@lcie.fr

RCS Nanterre B 408 363 171

Une société de Bureau Veritas

France

www.lcie.fr



## EC DECLARATION OF CONFORMITY

Issued in accordance with the

**ATEX Directive 94/9/EC**

**HEATEX LIMITED**

of

*Thrextan Road Industrial Estate, Watton, Norfolk, IP25 6NG, UK*

Declare that, in compliance with the above Directive, the product detailed below has been  
manufactured in conformity with

EC Type Examination Certificate Number LCIE 00 ATEX 6013 X

Issued by LCIE (Notified Body Number 0081)

of 33, Avenue du Général Leclerc, 92260 Fontenay-aux-Roses, France

|                                      |                                                                                                                                 |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| <b>Product description:</b>          | <b>FAW.../FCR Type Air Heater</b>                                                                                               |
| <b>Protection concept(s):</b>        | Increased Safety 'e'                                                                                                            |
| <b>Marking:</b>                      |  II 2 G<br>Ex e II T4 to T2                   |
| <b>Harmonised standards applied:</b> | EN 60079-0 (2006)<br>EN 60079-7 (2003)                                                                                          |
| <b>Other applicable Directives:</b>  | 2006/95/EC Low Voltage Directive<br>89/336/EEC Electromagnetic Compatibility Directive<br>(As amended by 92/31/EEC & 93/68/EEC) |
| <b>Other standards applied:</b>      | EN 60519-2 (Safety)<br>EN 61000-6-4 (Emissions)<br>EN 61000-6-2 (Immunity)                                                      |

Authorised signature:



Name:

R Whadcoat

Date:

9 May 2007



# 1 ATTESTATION D'EXAMEN CE DE TYPE

2 Appareils et systèmes de protection destinés à être utilisés en atmosphères explosibles  
Directive 94/9/CE

3 Numéro de l'attestation CE de type  
LCIE 00 ATEX 6013 X

4 Appareil ou système de protection

Appareil de chauffage  
Type : FAW

5 Demandeur : HEATEX LIMITED

6 Adresse : Threxton Road Industrial Estate  
Watton, Thetford, Norfolk, IP25 6NG  
UNITED KINGDOM

7 Cet appareil ou système de protection et ses variantes éventuelles acceptées est décrit dans l'annexe de la présente attestation et dans les documents descriptifs cités en annexe.

8 Le LCIE, organisme notifié sous la référence 0081 conformément à l'article 9 de la directive 94/9/CE du Parlement européen et du Conseil du 23 mars 1994, certifie que cet appareil ou système de protection est conforme aux exigences essentielles en ce qui concerne la sécurité et la santé pour la conception et la construction d'appareils et de systèmes de protection destinés à être utilisés en atmosphères explosibles, données dans l'annexe II de la directive. Les vérifications et épreuves figurent dans notre rapport confidentiel N° 21 455 010.

9 Le respect des exigences essentielles en ce qui concerne la sécurité et la santé est assuré par la conformité aux documents suivants :  
- EN 50014 (1992)  
- EN 50019 (1994)

10 Le signe X lorsqu'il est placé à la suite du numéro de l'attestation, indique que ce matériel ou système de protection est soumis aux conditions spéciales pour une utilisation sûre, mentionnées dans l'annexe de la présente attestation.

11 Cette attestation d'examen CE de type concerne uniquement la conception et la construction de l'appareil ou du système de protection spécifié, conformément à la directive 94/9/CE. Des exigences supplémentaires de cette directive sont applicables pour la fabrication et la fourniture de l'appareil ou du système de protection.

12 Le marquage de l'appareil ou du système de protection devra comporter, entre autres indications utiles, les mentions suivantes :

 II 2 G  
EEx e II T4 à T2

# 1 EC TYPE EXAMINATION CERTIFICATE

2 Equipment or Protective System Intended for use in Potentially explosive atmospheres  
Directive 94/9/CE

3 EC type Examination Certificate number  
LCIE 00 ATEX 6013 X

4 Equipment or Protective system

Heater  
Type : FAW

5 Applicant : HEATEX LIMITED

6 Address : Threxton Road Industrial Estate  
Watton, Thetford, Norfolk, IP25 6NG  
UNITED KINGDOM

7 This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

8 LCIE, notified body number 0081 in accordance with article 9 of the directive 94/9/CE of the European Parliament and Council of 23 March 1994, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective system intended for use in potentially explosive atmospheres, given in Annex II to the directive. The examination and test results are recorded in confidential report No 21 455 010

9 Compliance with the Essential Health and Safety Requirements has been assured by compliance with :  
- EN 50014 (1992)  
- EN 50019 (1994)

10 If the sign X is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.

11 This EC Type examination certificate relates only to the design and construction of this specified equipment or protective system in accordance with the Directive 94/9/EC. Further requirements of Directive applies to the manufacture and supply of this equipment or protective system.

12 The marking of the equipment or protective system shall include the following :

 II 2 G  
EEx e II T4 to T2

Fontenay-aux-Roses, le 23 juin 2000

Le Directeur de l'organisme certificateur  
Manager of the certification body

Timbre sec/dry seal

Par délégation  
Michel BRÉNON  
Directeur adjoint  
à la Certification

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## LABORATOIRE CENTRAL DES INDUSTRIES ELECTRIQUES

Société anonyme à Directoire et Conseil de surveillance au capital de 103 592 000 Francs - RCS Nanterre B 408 363 174

Siège social : 33, avenue du Général Leclerc - F 92260 Fontenay-aux-Roses - Tél. : +33 (0)1 40 95 60 60



(A1) ANNEXE

(A2) ATTESTATION D'EXAMEN CE DE TYPE

LCIE 00 ATEX 6013 X

(A3) Description de l'équipement ou du système de protection

L'appareil de chauffage type FAW, de tension nominale jusqu'à 660 V et de puissance nominale jusqu'à 4 kW, comprend une boîte de raccordement avec un montage de protection et jusqu'à 6 éléments chauffants métalliques.

L'appareil est construit en 2 versions :

- version "normale",
- version "compact".

Le marquage sera le suivant :

HEATEX LIMITED

Adresse

Type : FAW

N° de fabrication

Année de fabrication

II 2 G

EEx e II T4 à T2

LCIE 00 ATEX 6013 X

Ne pas ouvrir sous tension

Caractéristiques électriques

Le marquage CE est accompagné du numéro d'identification de l'organisme notifié responsable de la surveillance du système de qualité (0081 pour le LCIE).

(A4) Documents descriptifs

Dossier technique du Rév. 1 du 24/05/2000.

Ce document comprend 7 rubriques (8 pages).

(A5) Conditions spéciales pour une utilisation sûre

- Conditions d'alimentation :

. Version "normale" : 4 kW par élément ou tension polyphasée jusqu'à 660 V

. Version "compact" : 4 kW par élément ou tension polyphasée jusqu'à 550 V

- Classement en température :

. Version "normale" : pour une puissance maximale à la surface de l'élément de 3,01 W/cm<sup>2</sup> à sa tension nominale :

T3 jusqu'à + 40 °C

T2 jusqu'à + 60 °C

. Version "compact" : pour une puissance maximale à la surface de l'élément de 1,1 W/cm<sup>2</sup> à sa tension nominale :

T3 jusqu'à + 40 °C

T2 jusqu'à + 60 °C

(A6) Exigences essentielles en ce qui concerne la sécurité et la santé

La conception de cet équipement satisfait aux normes européennes EN 50014 et EN 50019.

Epreuve individuelle :

Chaque exemplaire du matériel devra subir une épreuve de rigidité diélectrique conformément aux dispositions du paragraphe 7 de la norme EN 50019.

(A1) SCHEDULE

(A2) EC TYPE EXAMINATION CERTIFICATE

LCIE 00 ATEX 6013 X

(A3) Description of Equipment or Protective System

The type FAW heater, rated at up to 660 V and 4 kW, comprises a terminal enclosure with integral mounting frame and guard and up to 6 finned tubular metal heating elements.

The equipment is manufactured in 2 models :

- "normal" model,
- "compact" model.

The marking will be the following :

HEATEX LIMITED

Address

Type : FAW

Serial number

Year of construction :

II 2 G

EEx e II T4 to T2

LCIE 00 ATEX 6013 X

Do not open while energized

Electrical characteristics.

The CE marking shall be accompanied by the identification number of the notified body responsible for surveillance of the quality system (0081 for the LCIE).

(A4) Descriptive documents :

Technical file Rev. 1 dated 24/05/2000.

This file includes 7 items (8 pages).

(A5) Special conditions for safe use

- Power rating :

. "Normal" model : 4 kW single or polyphase up to 660 V

. "Compact" model : 4 kW single or polyphase up to 550 V

- Temperature classification :

. "Normal" model : based on a maximum power density at the element surface of 3,01 W/cm<sup>2</sup> at its rated voltage :

T3 up to + 40 °C

T2 up to + 60 °C

. "Compact" model : based on a maximum power density at the element surface of 1,1 W/cm<sup>2</sup> at its rated voltage :

T3 up to + 40 °C

T2 up to + 60 °C

(A6) Essential Health and Safety Requirements

The design of the equipment complies to European standards EN 50014 and EN 50019.

Routine test :

Each single electrical apparatus must be submitted to a dielectric strength test as set forth by the dispositions of paragraph 7 of EN 50019 standard.





(A1) ATTESTATION D'EXAMEN CE DE TYPE  
LCIE 00 ATEX 6013 X du 23 juin 2000

AVENANT 00 ATEX 6013 X/01



(A1) EC TYPE EXAMINATION CERTIFICATE  
LCIE 00 ATEX 6013 X dated June 23, 2000

VARIATION 00 ATEX 6013 X/01

(A2) DÉSIGNATION DE L'ÉQUIPEMENT OU DU  
SYSTÈME DE PROTECTION :

Appareil de chauffage  
Types : FAW et FCR  
Construit par : HEATEX LIMITED

(A2) NAME OF EQUIPMENT OR PROTECTIVE SYSTEM :

Heater  
Type : FAW et FCR  
Manufactured by : HEATEX LIMITED

(A3) OBJET DE L'AVENANT, DESCRIPTION DE  
L'APPAREIL OU DU SYSTÈME DE PROTECTION :

- Création du type FCR.

Marquage : Inchangé. Complété par le type FCR.

(A3) SUBJECT OF THE VARIATION, DESCRIPTION OF  
EQUIPMENT OR PROTECTIVE SYSTEM :

- Creation of FCR type.

Marking : Unchanged. Completed by FCR type.

(A4) DOCUMENTS DESCRIPTIFS :

Dossier technique Rév. 1 du 08/06/2001.  
Ce dossier comprend 4 rubriques (5 pages).

(A4) DESCRIPTIVE DOCUMENTS :

Technical file Rev. 1 dated 08/06/2001.  
This file includes 4 items (5 pages).

(A5) CONDITIONS SPÉCIALES POUR UNE UTILISATION  
SÛRE :

Inchangées.

(A5) SPECIAL CONDITIONS FOR SAFE USE :

Unchanged.

(A6) EXIGENCES ESSENTIELLES EN CE QUI  
CONCERNE LA SÉCURITÉ ET LA SANTÉ :

Inchangées.

(A6) ESSENTIAL HEALTH AND SAFETY  
REQUIREMENTS :

Unchanged.

Fontenay-aux-Roses, le 27 juillet 2001

Le Directeur de l'organisme certificateur  
Manager of the certification body

Timbre sec/Dry seal

Par délégation  
Michel BRÉNON  
Directeur adjoint  
à la Certification

Page 1/1

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LABORATOIRE CENTRAL DES INDUSTRIES ELECTRIQUES

Société anonyme à Directoire et Conseil de surveillance au capital de 15 745 984 euros - RCS Nanterre B 408 363 174

33, avenue du Général Leclerc - BP n° 8 - F 92266 FONTENAY-AUX-ROSES CEDEX - Tél. : +33 1 40 95 60 60



(A1) ATTESTATION D'EXAMEN CE DE TYPE  
LCIE 00 ATEX 6013 X du 23 Juin 2000.

AVENANT 00 ATEX 6013X/02

(A2) DESIGNATION DE L'EQUIPEMENT OU DU  
SYSTEME DE PROTECTION :

Appareil de chauffage  
Type : FAW, FCR  
Construit par : HEATEX LIMITED

(A3) OBJET DE L'AVENANT, DESCRIPTION DE  
L'APPAREIL OU DU SYTEME DE PROTECTION :

Abaissement de la température minimale d'utilisation  
à -60°C.

Le marquage est inchangé.

(A4) DOCUMENTS DESCRIPTIFS :

Dossier technique n° 2004-17-TF rév. 3 du 20 Avril 2004.

Ce dossier comprend 2 rubriques (3 pages).

(A5) CONDITIONS SPECIALES POUR UNE  
UTILISATION SURE :

Le classement en température est modifié comme suit :

| Version /<br>Model    | Puissance maximale à la surface de<br>l'élément à sa tension nominale /<br>Maximal power of the element at surface<br>under nominal voltage | Température ambiante<br>d'utilisation /<br>Ambient operating<br>temperature | Classement en<br>température /<br>Temperature<br>classification |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|-----------------------------------------------------------------|
| Normale /<br>Normal   | 3,01 W/cm <sup>2</sup>                                                                                                                      | - 60 °C ≤ T <sub>amb</sub> ≤ + 40°C                                         | T3                                                              |
|                       | 1,35 W/cm <sup>2</sup>                                                                                                                      | - 60 °C ≤ T <sub>amb</sub> ≤ + 60°C                                         | T2                                                              |
| Compacte /<br>Compact | 1,1 W/cm <sup>2</sup>                                                                                                                       | - 60 °C ≤ T <sub>amb</sub> ≤ + 40°C                                         | T4                                                              |
|                       |                                                                                                                                             | - 60 °C ≤ T <sub>amb</sub> ≤ + 60°C                                         | T3                                                              |
|                       |                                                                                                                                             | - 60 °C ≤ T <sub>amb</sub> ≤ + 60°C                                         | T2                                                              |

(A6) EXIGENCES ESSENTIELLES EN CE QUI  
CONCERNE LA SECURITE ET LA SANTE :

Inchangées.

(A1) EC TYPE EXAMINATION CERTIFICATE  
LCIE 00 ATEX 6013 X dated June 23<sup>rd</sup>, 2000.

VARIATION 00 ATEX 6013X/02

(A2) NAME OF EQUIPMENT OR PROTECTIVE SYSTEM :

Heater  
Type : FAW, FCR  
Manufactured by : HEATEX LIMITED

(A3) SUBJECT OF THE VARIATION, DESCRIPTION OF  
EQUIPMENT OR PROTECTIVE SYSTEM :

Lowering of the minimal operating temperature  
to -60°C.

The marking is unchanged.

(A4) DESCRIPTIVE DOCUMENTS :

Certification file No. 2004-17-TF rev. 3 dated April 20<sup>th</sup>,  
2004.

This file includes 2 items (3 pages).

(A5) SPECIAL CONDITIONS FOR SAFE USE :

The temperature classification is modified as follows .

(A6) ESSENTIAL HEALTH AND SAFETY  
REQUIREMENTS :

Unchanged.

Fontenay-aux-Roses, le 30 septembre 2004

Le Directeur de l'organisme certificateur  
Manager of the certification body

Michel BRÉNON  
Timbre professionnel

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## EC DECLARATION OF CONFORMITY

Issued in accordance with the

**ATEX Directive 94/9/EC**

**HEATEX LIMITED**

of

*Thrextton Road Industrial Estate, Watton, Norfolk, IP25 6NG, UK*

Declare that, in compliance with the above Directive, the product detailed below has been  
manufactured in conformity with

EC Type Examination Certificate Number LCIE 00 ATEX 6013 X

Issued by LCIE (Notified Body Number 0081)

of 33, Avenue du Général Leclerc, 92260 Fontenay-aux-Roses, France

|                                      |                                                                                                                                 |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| <b>Product description:</b>          | <b>FAW.../FCR Type Air Heater</b>                                                                                               |
| <b>Protection concept(s):</b>        | Increased Safety 'e'                                                                                                            |
| <b>Marking:</b>                      |  II 2 G<br>Ex e II T4 to T2                   |
| <b>Harmonised standards applied:</b> | EN 60079-0 (2006)<br>EN 60079-7 (2003)                                                                                          |
| <b>Other applicable Directives:</b>  | 2006/95/EC Low Voltage Directive<br>89/336/EEC Electromagnetic Compatibility Directive<br>(As amended by 92/31/EEC & 93/68/EEC) |
| <b>Other standards applied:</b>      | EN 60519-2 (Safety)<br>EN 61000-6-4 (Emissions)<br>EN 61000-6-2 (Immunity)                                                      |

Authorised signature:



Name:

R Whadcoat

Date:

9 May 2007





1 **ATTESTATION D'EXAMEN CE DE TYPE**

2 Appareils et systèmes de protection destinés à être utilisés en atmosphères explosibles  
Directive 94/9/CE

3 Numéro de l'attestation CE de type  
LCIE 00 ATEX 6013 X

4 Appareil ou système de protection

Appareil de chauffage  
Type : FAW

5 Demandeur : HEATEX LIMITED

6 Adresse : Threxton Road Industrial Estate  
Watton, Thetford, Norfolk, IP25 6NG  
UNITED KINGDOM

7 Cet appareil ou système de protection et ses variantes éventuelles acceptées est décrit dans l'annexe de la présente attestation et dans les documents descriptifs cités en annexe.

8 Le LCIE, organisme notifié sous la référence 0081 conformément à l'article 9 de la directive 94/9/CE du Parlement européen et du Conseil du 23 mars 1994, certifie que cet appareil ou système de protection est conforme aux exigences essentielles en ce qui concerne la sécurité et la santé pour la conception et la construction d'appareils et de systèmes de protection destinés à être utilisés en atmosphères explosibles, données dans l'annexe II de la directive. Les vérifications et épreuves figurent dans notre rapport confidentiel N° 21 455 010.

9 Le respect des exigences essentielles en ce qui concerne la sécurité et la santé est assuré par la conformité aux documents suivants :  
- EN 50014 (1992)  
- EN 50019 (1994)

10 Le signe X lorsqu'il est placé à la suite du numéro de l'attestation, indique que ce matériel ou système de protection est soumis aux conditions spéciales pour une utilisation sûre, mentionnées dans l'annexe de la présente attestation.

11 Cette attestation d'examen CE de type concerne uniquement la conception et la construction de l'appareil ou du système de protection spécifié, conformément à la directive 94/9/CE. Des exigences supplémentaires de cette directive sont applicables pour la fabrication et la fourniture de l'appareil ou du système de protection.

12 Le marquage de l'appareil ou du système de protection devra comporter, entre autres indications utiles, les mentions suivantes :



II 2 G  
EEx e II T4 à T2

1 **EC TYPE EXAMINATION CERTIFICATE**

2 Equipment or Protective System Intended for use in Potentially explosive atmospheres  
Directive 94/9/CE

3 EC type Examination Certificate number  
LCIE 00 ATEX 6013 X

4 Equipment or Protective system

Heater  
Type : FAW

5 Applicant : HEATEX LIMITED

6 Address : Threxton Road Industrial Estate  
Watton, Thetford, Norfolk, IP25 6NG  
UNITED KINGDOM

7 This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

8 LCIE, notified body number 0081 in accordance with article 9 of the directive 94/9/CE of the European Parliament and Council of 23 March 1994, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective system intended for use in potentially explosive atmospheres, given in Annex II to the directive. The examination and test results are recorded in confidential report No 21 455 010

9 Compliance with the Essential Health and Safety Requirements has been assured by compliance with :  
- EN 50014 (1992)  
- EN 50019 (1994)

10 If the sign X is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.

11 This EC Type examination certificate relates only to the design and construction of this specified equipment or protective system in accordance with the Directive 94/9/EC. Further requirements of Directive applies to the manufacture and supply of this equipment or protective system.

12 The marking of the equipment or protective system shall include the following :



II 2 G  
EEx e II T4 to T2

Fontenay-aux-Roses, le 23 juin 2000

Le Directeur de l'organisme certificateur  
Manager of the certification body

Timbre sec/dry seal

Par délégation  
Michel BRÉNON  
Directeur adjoint  
à la Certification

Page 1/2 13-b

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■ **LABORATOIRE CENTRAL DES INDUSTRIES ELECTRIQUES**

Société anonyme à Directoire et Conseil de surveillance au capital de 103 592 000 Francs - RCS Nanterre B 408 363 174

Siège social : 33, avenue du Général Leclerc - F 92260 Fontenay-aux-Roses - Tél. : +33 (0)1 40 95 60 60



(A1) ANNEXE

(A2) ATTESTATION D'EXAMEN CE DE TYPE

LCIE 00 ATEX 6013 X

(A3) Description de l'équipement ou du système de protection

L'appareil de chauffage type FAW, de tension nominale jusqu'à 660 V et de puissance nominale jusqu'à 4 kW, comprend une boîte de raccordement avec un montage de protection et jusqu'à 6 éléments chauffants métalliques.

L'appareil est construit en 2 versions :

- version "normale",
- version "compact".

Le marquage sera le suivant :

HEATEX LIMITED

Adresse

Type : FAW

N° de fabrication

Année de fabrication

 II 2 G

EEx e II T4 à T2

LCIE 00 ATEX 6013 X

Ne pas ouvrir sous tension

Caractéristiques électriques

Le marquage CE est accompagné du numéro d'identification de l'organisme notifié responsable de la surveillance du système de qualité (0081 pour le LCIE).

(A4) Documents descriptifs

Dossier technique du Rév. 1 du 24/05/2000.

Ce document comprend 7 rubriques (8 pages).

(A5) Conditions spéciales pour une utilisation sûre

- Conditions d'alimentation :

. Version "normale" : 4 kW par élément ou tension polyphasée jusqu'à 660 V

. Version "compact" : 4 kW par élément ou tension polyphasée jusqu'à 550 V

- Classement en température :

. Version "normale" : pour une puissance maximale à la surface de l'élément de 3,01 W/cm² à sa tension nominale :

T3 jusqu'à + 40 °C

T2 jusqu'à + 60 °C

. Version "compact" : pour une puissance maximale à la surface de l'élément de 1,1 W/cm² à sa tension nominale :

T3 jusqu'à + 40 °C

T2 jusqu'à + 60 °C

(A6) Exigences essentielles en ce qui concerne la sécurité et la santé

La conception de cet équipement satisfait aux normes européennes EN 50014 et EN 50019.

Epreuve individuelle :

Chaque exemplaire du matériel devra subir une épreuve de rigidité diélectrique conformément aux dispositions du paragraphe 7 de la norme EN 50019.

(A1) SCHEDULE

(A2) EC TYPE EXAMINATION CERTIFICATE

LCIE 00 ATEX 6013 X

(A3) Description of Equipment or Protective System

The type FAW heater, rated at up to 660 V and 4 kW, comprises a terminal enclosure with integral mounting frame and guard and up to 6 finned tubular metal heating elements.

The equipment is manufactured in 2 models :

- "normal" model,
- "compact" model.

The marking will be the following :

HEATEX LIMITED

Address

Type : FAW

Serial number

Year of construction :

 II 2 G

EEx e II T4 to T2

LCIE 00 ATEX 6013 X

Do not open while energized

Electrical characteristics.

The CE marking shall be accompanied by the identification number of the notified body responsible for surveillance of the quality system (0081 for the LCIE).

(A4) Descriptive documents :

Technical file Rev. 1 dated 24/05/2000.

This file includes 7 items (8 pages).

(A5) Special conditions for safe use

- Power rating :

. "Normal" model : 4 kW single or polyphase up to 660 V

. "Compact" model : 4 kW single or polyphase up to 550 V

- Temperature classification :

. "Normal" model : based on a maximum power density at the element surface of 3,01 W/cm² at its rated voltage :

T3 up to + 40 °C

T2 up to + 60 °C

. "Compact" model : based on a maximum power density at the element surface of 1,1 W/cm² at its rated voltage :

T3 up to + 40 °C

T2 up to + 60 °C

(A6) Essential Health and Safety Requirements

The design of the equipment complies to European standards EN 50014 and EN 50019.

Routine test :

Each single electrical apparatus must be submitted to a dielectric strength test as set forth by the dispositions of paragraph 7 of EN 50019 standard.



(A1) ATTESTATION D'EXAMEN CE DE TYPE  
LCIE 00 ATEX 6013 X du 23 juin 2000

AVENANT 00 ATEX 6013 X/01



(A1) EC TYPE EXAMINATION CERTIFICATE  
LCIE 00 ATEX 6013 X dated June 23, 2000

VARIATION 00 ATEX 6013 X/01

(A2) DÉSIGNATION DE L'ÉQUIPEMENT OU DU  
SYSTÈME DE PROTECTION :

Appareil de chauffage  
Types : FAW et FCR  
Construit par : HEATEX LIMITED

(A2) NAME OF EQUIPMENT OR PROTECTIVE SYSTEM :

Heater  
Type : FAW et FCR  
Manufactured by : HEATEX LIMITED

(A3) OBJET DE L'AVENANT, DESCRIPTION DE  
L'APPAREIL OU DU SYSTÈME DE PROTECTION :

- Création du type FCR.

Marquage : Inchangé. Complété par le type FCR.

(A3) SUBJECT OF THE VARIATION, DESCRIPTION OF  
EQUIPMENT OR PROTECTIVE SYSTEM :

- Creation of FCR type.

Marking : Unchanged. Completed by FCR type.

(A4) DOCUMENTS DESCRIPTIFS :

Dossier technique Rév. 1 du 08/06/2001.  
Ce dossier comprend 4 rubriques (5 pages).

(A4) DESCRIPTIVE DOCUMENTS :

Technical file Rev. 1 dated 08/06/2001.  
This file includes 4 items (5 pages).

(A5) CONDITIONS SPÉCIALES POUR UNE UTILISATION  
SÛRE :

Inchangées.

(A5) SPECIAL CONDITIONS FOR SAFE USE :

Unchanged.

(A6) EXIGENCES ESSENTIELLES EN CE QUI  
CONCERNE LA SÉCURITÉ ET LA SANTÉ :

Inchangées.

(A6) ESSENTIAL HEALTH AND SAFETY  
REQUIREMENTS :

Unchanged.

Fontenay-aux-Roses, le 27 juillet 2001

Le Directeur de l'organisme certificateur  
Manager of the certification body

  
Timbre sec/Dry Seal

Par délégation  
Michel BRÉNON  
Directeur adjoint  
à la Certification

Page 1/1

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■ LABORATOIRE CENTRAL DES INDUSTRIES ELECTRIQUES

Société anonyme à Directoire et Conseil de surveillance au capital de 15 745 984 euros - RCS Nanterre B 408 363 174

33, avenue du Général Leclerc - BP n° 8 - F 92266 FONTENAY-AUX-ROSES CEDEX - Tél. : +33 1 40 95 60 60





(A1) ATTESTATION D'EXAMEN CE DE TYPE  
LCIE 00 ATEX 6013 X du 23 Juin 2000.

AVENANT 00 ATEX 6013X/02

(A2) DESIGNATION DE L'EQUIPEMENT OU DU  
SYSTEME DE PROTECTION :

Appareil de chauffage  
Type : FAW, FCR  
Construit par : HEATEX LIMITED

(A3) OBJET DE L'AVENANT, DESCRIPTION DE  
L'APPAREIL OU DU SYTEME DE PROTECTION :

Abaissement de la température minimale d'utilisation  
à -60°C.

Le marquage est inchangé.

(A4) DOCUMENTS DESCRIPTIFS :

Dossier technique n° 2004-17-TF rév. 3 du 20 Avril 2004.

Ce dossier comprend 2 rubriques (3 pages).

(A5) CONDITIONS SPECIALES POUR UNE  
UTILISATION SURE :

Le classement en température est modifié comme suit :

(A1) EC TYPE EXAMINATION CERTIFICATE  
LCIE 00 ATEX 6013 X dated June 23<sup>rd</sup>, 2000.

VARIATION 00 ATEX 6013X/02

(A2) NAME OF EQUIPMENT OR PROTECTIVE SYSTEM :

Heater  
Type : FAW, FCR  
Manufactured by : HEATEX LIMITED

(A3) SUBJECT OF THE VARIATION, DESCRIPTION OF  
EQUIPMENT OR PROTECTIVE SYSTEM :

Lowering of the minimal operating temperature  
to -60°C.

The marking is unchanged.

(A4) DESCRIPTIVE DOCUMENTS :

Certification file No. 2004-17-TF rev. 3 dated April 20<sup>th</sup>,  
2004.

This file includes 2 items (3 pages).

(A5) SPECIAL CONDITIONS FOR SAFE USE :

The temperature classification is modified as follows .

| Version /<br>Model    | Puissance maximale à la surface de<br>l'élément à sa tension nominale /<br>Maximal power of the element at surface<br>under nominal voltage | Température ambiante<br>d'utilisation /<br>Ambient operating<br>temperature | Classement en<br>température /<br>Temperature<br>classification |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|-----------------------------------------------------------------|
| Normale /<br>Normal   | 3,01 W/cm <sup>2</sup>                                                                                                                      | - 60 °C ≤ T <sub>amb</sub> ≤ + 40°C                                         | T3                                                              |
|                       | 1,35 W/cm <sup>2</sup>                                                                                                                      | - 60 °C ≤ T <sub>amb</sub> ≤ + 60°C                                         | T2                                                              |
| Compacte /<br>Compact | 1,1 W/cm <sup>2</sup>                                                                                                                       | - 60 °C ≤ T <sub>amb</sub> ≤ + 40°C                                         | T4                                                              |
|                       |                                                                                                                                             | - 60 °C ≤ T <sub>amb</sub> ≤ + 60°C                                         | T3                                                              |
|                       |                                                                                                                                             | - 60 °C ≤ T <sub>amb</sub> ≤ + 60°C                                         | T2                                                              |

(A6) EXIGENCES ESSENTIELLES EN CE QUI  
CONCERNE LA SECURITE ET LA SANTE :

Inchangées.

(A6) ESSENTIAL HEALTH AND SAFETY  
REQUIREMENTS :

Unchanged.

Fontenay-aux-Roses, le 30 septembre 2004

Le Directeur de l'organisme certificateur  
Manager of the certification body

Michel BRÉNON  
Timbre certifié

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## EC DECLARATION OF CONFORMITY

Issued in accordance with the

**ATEX Directive 94/9/EC**

**HEATEX LIMITED**

of

*Thrextan Road Industrial Estate, Watton, Norfolk, IP25 6NG, UK.*

Declare that, in compliance with the above Directive, the product detailed below has been  
manufactured in conformity with

EC Type Examination Certificate Number LCIE 00 ATEX 6013 X

Issued by LCIE (Notified Body Number 0081)

of 33, Avenue du Général Leclerc, 92260 Fontenay-aux-Roses, France

|                                      |                                                                                                                                 |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| <b>Product description:</b>          | <b>FAW.../FCR Type Air Heater</b>                                                                                               |
| <b>Protection concept(s):</b>        | Increased Safety 'e'                                                                                                            |
| <b>Marking:</b>                      |  II 2 G<br>Ex e II T4 to T2                    |
| <b>Harmonised standards applied:</b> | EN 60079-0 (2006)<br>EN 60079-7 (2003)                                                                                          |
| <b>Other applicable Directives:</b>  | 2006/95/EC Low Voltage Directive<br>89/336/EEC Electromagnetic Compatibility Directive<br>(As amended by 92/31/EEC & 93/68/EEC) |
| <b>Other standards applied:</b>      | EN 60519-2 (Safety)<br>EN 61000-6-4 (Emissions)<br>EN 61000-6-2 (Immunity)                                                      |

Authorised signature:



Name: R Whadcoat

Date: 9 May 2007



# 1 ATTESTATION D'EXAMEN CE DE TYPE

2 Appareils et systèmes de protection destinés à être utilisés en atmosphères explosibles  
Directive 94/9/CE

3 Numéro de l'attestation CE de type  
LCIE 00 ATEX 6013 X

4 Appareil ou système de protection  
Appareil de chauffage  
Type : FAW

5 Demandeur : HEATEX LIMITED

6 Adresse : Threxton Road Industrial Estate  
Watton, Thetford, Norfolk, IP25 6NG  
UNITED KINGDOM

7 Cet appareil ou système de protection et ses variantes éventuelles acceptées est décrit dans l'annexe de la présente attestation et dans les documents descriptifs cités en annexe.

8 Le LCIE, organisme notifié sous la référence 0081 conformément à l'article 9 de la directive 94/9/CE du Parlement européen et du Conseil du 23 mars 1994, certifie que cet appareil ou système de protection est conforme aux exigences essentielles en ce qui concerne la sécurité et la santé pour la conception et la construction d'appareils et de systèmes de protection destinés à être utilisés en atmosphères explosibles, données dans l'annexe II de la directive. Les vérifications et épreuves figurent dans notre rapport confidentiel N° 21 455 010.

9 Le respect des exigences essentielles en ce qui concerne la sécurité et la santé est assuré par la conformité aux documents suivants :  
- EN 50014 (1992)  
- EN 50019 (1994)

10 Le signe X lorsqu'il est placé à la suite du numéro de l'attestation, indique que ce matériel ou système de protection est soumis aux conditions spéciales pour une utilisation sûre, mentionnées dans l'annexe de la présente attestation.

11 Cette attestation d'examen CE de type concerne uniquement la conception et la construction de l'appareil ou du système de protection spécifié, conformément à la directive 94/9/CE. Des exigences supplémentaires de cette directive sont applicables pour la fabrication et la fourniture de l'appareil ou du système de protection.

12 Le marquage de l'appareil ou du système de protection devra comporter, entre autres indications utiles, les mentions suivantes :



II 2 G  
EEx e II T4 à T2

# 1 EC TYPE EXAMINATION CERTIFICATE

2 Equipment or Protective System Intended for use in Potentially explosive atmospheres  
Directive 94/9/CE

3 EC type Examination Certificate number  
LCIE 00 ATEX 6013 X

4 Equipment or Protective system  
Heater  
Type : FAW

5 Applicant : HEATEX LIMITED

6 Address : Threxton Road Industrial Estate  
Watton, Thetford, Norfolk, IP25 6NG  
UNITED KINGDOM

7 This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

8 LCIE, notified body number 0081 in accordance with article 9 of the directive 94/9/CE of the European Parliament and Council of 23 March 1994, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective system intended for use in potentially explosive atmospheres, given in Annex II to the directive. The examination and test results are recorded in confidential report No 21 455 010.

9 Compliance with the Essential Health and Safety Requirements has been assured by compliance with :  
- EN 50014 (1992)  
- EN 50019 (1994)

10 If the sign X is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.

11 This EC Type examination certificate relates only to the design and construction of this specified equipment or protective system in accordance with the Directive 94/9/EC. Further requirements of Directive applies to the manufacture and supply of this equipment or protective system.

12 The marking of the equipment or protective system shall include the following :



II 2 G  
EEx e II T4 to T2

Fontenay-aux-Roses, le 23 juin 2000

Le Directeur de l'organisme certificateur  
Manager of the certification body

Timbre sec/dry seal

Par délégation  
Michel BRÉNON  
Directeur adjoint  
à la Certification

Page 1/2

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■ LABORATOIRE CENTRAL DES INDUSTRIES ELECTRIQUES

Société anonyme à Directoire et Conseil de surveillance au capital de 103 592 000 Francs - RCS Nanterre B 408 363 174

Siège social : 33, avenue du Général Leclerc - F 92260 Fontenay-aux-Roses - Tél. : +33 (0)1 40 95 60 60





(A1) ANNEXE

(A2) ATTESTATION D'EXAMEN CE DE TYPE

LCIE 00 ATEX 6013 X

(A3) Description de l'équipement ou du système de protection

L'appareil de chauffage type FAW, de tension nominale jusqu'à 660 V et de puissance nominale jusqu'à 4 kW, comprend une boîte de raccordement avec un montage de protection et jusqu'à 6 éléments chauffants métalliques.

L'appareil est construit en 2 versions :

- version "normale",
- version "compact".

Le marquage sera le suivant :

HEATEX LIMITED

Adresse

Type : FAW

N° de fabrication

Année de fabrication

 II 2 G

EEx e II T4 à T2

LCIE 00 ATEX 6013 X

Ne pas ouvrir sous tension

Caractéristiques électriques

Le marquage CE est accompagné du numéro d'identification de l'organisme notifié responsable de la surveillance du système de qualité (0081 pour le LCIE).

(A4) Documents descriptifs

Dossier technique du Rév. 1 du 24/05/2000.

Ce document comprend 7 rubriques (8 pages).

(A5) Conditions spéciales pour une utilisation sûre

- Conditions d'alimentation :

. Version "normale" : 4 kW par élément ou tension polyphasée jusqu'à 660 V

. Version "compact" : 4 kW par élément ou tension polyphasée jusqu'à 550 V

- Classement en température :

. Version "normale" : pour une puissance maximale à la surface de l'élément de 3,01 W/cm<sup>2</sup> à sa tension nominale :

T3 jusqu'à + 40 °C

T2 jusqu'à + 60 °C

. Version "compact" : pour une puissance maximale à la surface de l'élément de 1,1 W/cm<sup>2</sup> à sa tension nominale :

T3 jusqu'à + 40 °C

T2 jusqu'à + 60 °C

(A6) Exigences essentielles en ce qui concerne la sécurité et la santé

La conception de cet équipement satisfait aux normes européennes EN 50014 et EN 50019.

Epreuve individuelle :

Chaque exemplaire du matériel devra subir une épreuve de rigidité diélectrique conformément aux dispositions du paragraphe 7 de la norme EN 50019.

(A1) SCHEDULE

(A2) EC TYPE EXAMINATION CERTIFICATE

LCIE 00 ATEX 6013 X

(A3) Description of Equipment or Protective System

The type FAW heater, rated at up to 660 V and 4 kW, comprises a terminal enclosure with integral mounting frame and guard and up to 6 finned tubular metal heating elements.

The equipment is manufactured in 2 models :

- "normal" model,
- "compact" model.

The marking will be the following :

HEATEX LIMITED

Address

Type : FAW

Serial number

Year of construction :

 II 2 G

EEx e II T4 to T2

LCIE 00 ATEX 6013 X

Do not open while energized

Electrical characteristics.

The CE marking shall be accompanied by the identification number of the notified body responsible for surveillance of the quality system (0081 for the LCIE).

(A4) Descriptive documents :

Technical file Rev. 1 dated 24/05/2000.

This file includes 7 items (8 pages).

(A5) Special conditions for safe use

- Power rating :

. "Normal" model : 4 kW single or polyphase up to 660 V

. "Compact" model : 4 kW single or polyphase up to 550 V

- Temperature classification :

. "Normal" model : based on a maximum power density at the element surface of 3,01 W/cm<sup>2</sup> at its rated voltage :

T3 up to + 40 °C

T2 up to + 60 °C

. "Compact" model : based on a maximum power density at the element surface of 1,1 W/cm<sup>2</sup> at its rated voltage :

T3 up to + 40 °C

T2 up to + 60 °C

(A6) Essential Health and Safety Requirements

The design of the equipment complies to European standards EN 50014 and EN 50019.

Routine test :

Each single electrical apparatus must be submitted to a dielectric strength test as set forth by the dispositions of paragraph 7 of EN 50019 standard.



(A1) ATTESTATION D'EXAMEN CE DE TYPE  
LCIE 00 ATEX 6013 X du 23 juin 2000

AVENANT 00 ATEX 6013 X/01



(A1) EC TYPE EXAMINATION CERTIFICATE  
LCIE 00 ATEX 6013 X dated June 23, 2000

VARIATION 00 ATEX 6013 X/01

(A2) DÉSIGNATION DE L'ÉQUIPEMENT OU DU  
SYSTÈME DE PROTECTION :

Appareil de chauffage  
Types : FAW et FCR  
Construit par : HEATEX LIMITED

(A2) NAME OF EQUIPMENT OR PROTECTIVE SYSTEM :

Heater  
Type : FAW et FCR  
Manufactured by : HEATEX LIMITED

(A3) OBJET DE L'AVENANT, DESCRIPTION DE  
L'APPAREIL OU DU SYSTÈME DE PROTECTION :

- Création du type FCR.

Marquage : Inchangé. Complété par le type FCR.

(A3) SUBJECT OF THE VARIATION, DESCRIPTION OF  
EQUIPMENT OR PROTECTIVE SYSTEM :

- Creation of FCR type.

Marking : Unchanged. Completed by FCR type.

(A4) DOCUMENTS DESCRIPTIFS :

Dossier technique Rév. 1 du 08/06/2001.  
Ce dossier comprend 4 rubriques (5 pages).

(A4) DESCRIPTIVE DOCUMENTS :

Technical file Rev. 1 dated 08/06/2001.  
This file includes 4 items (5 pages).

(A5) CONDITIONS SPÉCIALES POUR UNE UTILISATION  
SÛRE :

Inchangées.

(A5) SPECIAL CONDITIONS FOR SAFE USE :

Unchanged.

(A6) EXIGENCES ESSENTIELLES EN CE QUI  
CONCERNE LA SÉCURITÉ ET LA SANTÉ :

Inchangées.

(A6) ESSENTIAL HEALTH AND SAFETY  
REQUIREMENTS :

Unchanged.

Fontenay-aux-Roses, le 27 juillet 2001

Le Directeur de l'organisme certificateur  
Manager of the certification body

Timbre sec/Dry seal

Par délégation  
Michel BRÉNON  
Directeur adjoint  
à la Certification

Page 1/1

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■ LABORATOIRE CENTRAL DES INDUSTRIES ELECTRIQUES

Société anonyme à Directoire et Conseil de surveillance au capital de 15 745 984 euros - RCS Nanterre B 408 363 174

33, avenue du Général Leclerc - BP n° 8 - F 92266 FONTENAY-AUX-ROSES CEDEX - Tél. : +33 1 40 95 60 60

13-c



(A1) ATTESTATION D'EXAMEN CE DE TYPE  
LCIE 00 ATEX 6013 X du 23 Juin 2000.

AVENANT 00 ATEX 6013X/02

(A2) DESIGNATION DE L'EQUIPEMENT OU DU  
SYSTEME DE PROTECTION :

Appareil de chauffage  
Type : FAW, FCR  
Construit par : HEATEX LIMITED

(A3) OBJET DE L'AVENANT, DESCRIPTION DE  
L'APPAREIL OU DU SYTEME DE PROTECTION :

Abaissement de la température minimale d'utilisation  
à -60°C.

Le marquage est inchangé.

(A4) DOCUMENTS DESCRIPTIFS :

Dossier technique n° 2004-17-TF rév. 3 du 20 Avril 2004.

Ce dossier comprend 2 rubriques (3 pages).

(A5) CONDITIONS SPECIALES POUR UNE  
UTILISATION SURE :

Le classement en température est modifié comme suit :

| Version /<br>Model    | Puissance maximale à la surface de<br>l'élément à sa tension nominale /<br>Maximal power of the element at surface<br>under nominal voltage | Température ambiante<br>d'utilisation /<br>Ambient operating<br>temperature | Classement en<br>température /<br>Temperature<br>classification |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|-----------------------------------------------------------------|
| Normale /<br>Normal   | 3,01 W/cm <sup>2</sup>                                                                                                                      | - 60 °C ≤ T <sub>amb</sub> ≤ + 40°C                                         | T3                                                              |
|                       |                                                                                                                                             | - 60 °C ≤ T <sub>amb</sub> ≤ + 60°C                                         | T2                                                              |
|                       | 1,35 W/cm <sup>2</sup>                                                                                                                      | - 60 °C ≤ T <sub>amb</sub> ≤ + 40°C                                         | T4                                                              |
| Compacte /<br>Compact | 1,1 W/cm <sup>2</sup>                                                                                                                       | - 60 °C ≤ T <sub>amb</sub> ≤ + 40°C                                         | T3                                                              |
|                       |                                                                                                                                             | - 60 °C ≤ T <sub>amb</sub> ≤ + 60°C                                         | T2                                                              |

(A6) EXIGENCES ESSENTIELLES EN CE QUI  
CONCERNE LA SECURITE ET LA SANTE :

Inchangées.

(A1) EC TYPE EXAMINATION CERTIFICATE  
LCIE 00 ATEX 6013 X dated June 23<sup>rd</sup>, 2000.

VARIATION 00 ATEX 6013X/02

(A2) NAME OF EQUIPMENT OR PROTECTIVE SYSTEM :

Heater  
Type : FAW, FCR  
Manufactured by : HEATEX LIMITED

(A3) SUBJECT OF THE VARIATION, DESCRIPTION OF  
EQUIPMENT OR PROTECTIVE SYSTEM :

Lowering of the minimal operating temperature  
to -60°C.

The marking is unchanged.

(A4) DESCRIPTIVE DOCUMENTS :

Certification file No. 2004-17-TF rev. 3 dated April 20<sup>th</sup>,  
2004.

This file includes 2 items (3 pages).

(A5) SPECIAL CONDITIONS FOR SAFE USE :

The temperature classification is modified as follows .

(A6) ESSENTIAL HEALTH AND SAFETY  
REQUIREMENTS :

Unchanged.

Fontenay-aux-Roses, le 30 septembre 2004

Le Directeur de l'organisme certificateur  
Manager of the certification body

Michel BRÉNON

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|                               |                                |                        |                            |
|-------------------------------|--------------------------------|------------------------|----------------------------|
| LCIE                          | 33, rue du Général Leclerc     | Tel : +33 (0) 95 60 60 | Société Anonyme            |
| Laboratoire Central           | BP 5                           | Fax : +33 (0) 95 86 56 | au capital de 15 715 984 € |
| des Industries Electriques    | 11200 Fontenay-aux-Roses cedex | contact@licie.fr       | RCS Nanterre B 408 364 171 |
| Une société de Bureau Veritas | France                         | www.lcie.fr            |                            |

## EC DECLARATION OF CONFORMITY

Issued in accordance with the

**ATEX Directive 94/9/EC**

**HEATEX LIMITED**

of

*Thrextan Road Industrial Estate, Watton, Norfolk, IP25 6NG, UK*

Declare that, in compliance with the above Directive, the product detailed below has been  
manufactured in conformity with

EC Type Examination Certificate Number LCIE 00 ATEX 6013 X

Issued by LCIE (Notified Body Number 0081)

of 33, Avenue du Général Leclerc, 92260 Fontenay-aux-Roses, France

|                                      |                                                                                                                                 |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| <b>Product description:</b>          | <b>FAW.../FCR Type Air Heater</b>                                                                                               |
| <b>Protection concept(s):</b>        | Increased Safety 'e'                                                                                                            |
| <b>Marking:</b>                      |  II 2 G<br>Ex e II T4 to T2                    |
| <b>Harmonised standards applied:</b> | EN 60079-0 (2006)<br>EN 60079-7 (2003)                                                                                          |
| <b>Other applicable Directives:</b>  | 2006/95/EC Low Voltage Directive<br>89/336/EEC Electromagnetic Compatibility Directive<br>(As amended by 92/31/EEC & 93/68/EEC) |
| <b>Other standards applied:</b>      | EN 60519-2 (Safety)<br>EN 61000-6-4 (Emissions)<br>EN 61000-6-2 (Immunity)                                                      |

Authorised signature:



Name:

R Whadcoat

Date:

9 May 2007



**Certificate of Conformity**

Batch Code: 24243

| Item | Code      | Description                                                                                                                                                                   |
|------|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1    | S99000207 | (S99000207) FAW 1000 Hazardous Area Air Warmer Rated 1KW on 240/415v 1/3ph 50hz : Floor Mounted : Dimensions 1221mm x 160mm x 186mm : Certified Ex 'e' II T3 Zone 1 or 2 IP67 |

**TESTS**

- 1 Resistance check within 7.5% of rated value.
- 2 High voltage flash test (cold) @ 1830 volts for 1 minute.
- 3 Insulation Resistance (cold) > 999M @ 500 volts D.C.
- 4 Earth Continuity Check
- 5 Dimensional Check
- 6 Hydraulic Pressure Test @ Bar.g for minutes.
- 7 Serial no's. 081041 to 081050.

"Certified that the equipment/services detailed hereon have been inspected and tested in accordance with the contract or purchase order and, unless noted hereon, conform to the specifications and drawings thereto."

Signed:



For and on behalf of Heatex Ltd.

Date: 26/02/2008

**EXHEAT LTD**

Threxton Road Industrial Estate • Watton • Thetford • Norfolk • IP25 6NG • UK  
Tel: +44 (0) 1953 886200 • Fax: +44 (0) 1953 886222 • Email: sales@heatex.co.uk • Web Site: www.exheat.com  
Registered office: Dyke Beck House • Wymondham • Norfolk • NR18 9PL Registered in England 2624818

**Certificate of Conformity**

Batch Code: 23974

| Item | Code      | Description                                                                                                                                                                     |
|------|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2    | S99000103 | (S99000103) FAW 1000 /110/ T3 Hazardous Area Air Warmer Rated 1KW on 110v 1ph 50hz : Floor Mounted : Dimensions 1221mm x 160mm x 186mm : Certified Ex'e' II T3 Zone 1 or 2 IP67 |

**TESTS**

- 1 Resistance check within 7.5% of rated value.
- 2 High voltage flash test (cold) @ 1500 volts for 1 minute.
- 3 Insulation Resistance (cold) > 999M @ 500 volts D.C.
- 4 Earth Continuity Check
- 5 Dimensional Check
- 6 Hydraulic Pressure Test @ Bar.g for minutes.
- 7 Serial no's. 074994 to 074998.

"Certified that the equipment/services detailed hereon have been inspected and tested in accordance with the contract or purchase order and, unless noted hereon, conform to the specifications and drawings thereto."

Signed:

For and on behalf of Heatex Ltd.

Date: 07/02/2008

**EXHEAT LTD**

Threxton Road Industrial Estate • Watton • Thetford • Norfolk • IP25 6NG • UK  
Tel: +44 (0) 1953 886200 • Fax: +44 (0) 1953 886222 • Email: sales@heatex.co.uk • Web Site: www.exheat.com  
Registered office: Dyke Beck House • Wymondham • Norfolk • NR18 9PL Registered in England 2624818



# 1 ATTESTATION D'EXAMEN CE DE TYPE

2 Appareils et systèmes de protection destinés à être utilisés en atmosphères explosibles  
Directive 94/9/CE

3 Numéro de l'attestation CE de type  
LCIE 00 ATEX 6013 X

4 Appareil ou système de protection

Appareil de chauffage  
Type : FAW

5 Demandeur : HEATEX LIMITED

6 Adresse : Threxton Road Industrial Estate  
Watton, Thetford, Norfolk, IP25 6NG  
UNITED KINGDOM

7 Cet appareil ou système de protection et ses variantes éventuelles acceptées est décrit dans l'annexe de la présente attestation et dans les documents descriptifs cités en annexe.

8 Le LCIE, organisme notifié sous la référence 0081 conformément à l'article 9 de la directive 94/9/CE du Parlement européen et du Conseil du 23 mars 1994, certifie que cet appareil ou système de protection est conforme aux exigences essentielles en ce qui concerne la sécurité et la santé pour la conception et la construction d'appareils et de systèmes de protection destinés à être utilisés en atmosphères explosibles, données dans l'annexe II de la directive. Les vérifications et épreuves figurent dans notre rapport confidentiel N° 21 455 010.

9 Le respect des exigences essentielles en ce qui concerne la sécurité et la santé est assuré par la conformité aux documents suivants :  
- EN 50014 (1992)  
- EN 50019 (1994)

10 Le signe X lorsqu'il est placé à la suite du numéro de l'attestation, indique que ce matériel ou système de protection est soumis aux conditions spéciales pour une utilisation sûre, mentionnées dans l'annexe de la présente attestation.

11 Cette attestation d'examen CE de type concerne uniquement la conception et la construction de l'appareil ou du système de protection spécifié, conformément à la directive 94/9/CE. Des exigences supplémentaires de cette directive sont applicables pour la fabrication et la fourniture de l'appareil ou du système de protection.

12 Le marquage de l'appareil ou du système de protection devra comporter, entre autres indications utiles, les mentions suivantes :



II 2 G  
EEx e II T4 à T2

# 1 EC TYPE EXAMINATION CERTIFICATE

2 Equipment or Protective System Intended for use in Potentially explosive atmospheres  
Directive 94/9/CE

3 EC type Examination Certificate number  
LCIE 00 ATEX 6013 X

4 Equipment or Protective system

Heater  
Type : FAW

5 Applicant : HEATEX LIMITED

6 Address : Threxton Road Industrial Estate  
Watton, Thetford, Norfolk, IP25 6NG  
UNITED KINGDOM

7 This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

8 LCIE, notified body number 0081 in accordance with article 9 of the directive 94/9/CE of the European Parliament and Council of 23 March 1994, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective system intended for use in potentially explosive atmospheres, given in Annex II to the directive. The examination and test results are recorded in confidential report No 21 455 010.

9 Compliance with the Essential Health and Safety Requirements has been assured by compliance with :  
- EN 50014 (1992)  
- EN 50019 (1994)

10 If the sign X is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.

11 This EC Type examination certificate relates only to the design and construction of this specified equipment or protective system in accordance with the Directive 94/9/EC. Further requirements of Directive applies to the manufacture and supply of this equipment or protective system.

12 The marking of the equipment or protective system shall include the following :



II 2 G  
EEx e II T4 to T2

Fontenay-aux-Roses, le 23 juin 2000

Le Directeur de l'organisme certificateur  
Manager of the certification body

Timbre sec/dry seal

Par délégation  
Michel BRÉNON  
Directeur adjoint  
à la Certification

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LABORATOIRE CENTRAL DES INDUSTRIES ELECTRIQUES

Société anonyme à Directoire et Conseil de surveillance au capital de 103 592 000 Francs - RCS Nanterre B 408 363 174

Siège social : 33, avenue du Général Leclerc - F 92260 Fontenay-aux-Roses - Tél. : +33 (0)1 40 95 60 60



(A1) **ANNEXE**

(A2) **ATTESTATION D'EXAMEN CE DE TYPE**

**LCIE 00 ATEX 6013 X**

(A3) **Description de l'équipement ou du système de protection**

L'appareil de chauffage type FAW, de tension nominale jusqu'à 660 V et de puissance nominale jusqu'à 4 kW, comprend une boîte de raccordement avec un montage de protection et jusqu'à 6 éléments chauffants métalliques.

L'appareil est construit en 2 versions :

- version "normale",
- version "compact".

**Le marquage sera le suivant :**

HEATEX LIMITED

Adresse

Type : FAW

N° de fabrication

Année de fabrication

 II 2 G

EEx e II T4 à T2

LCIE 00 ATEX 6013 X

Ne pas ouvrir sous tension

Caractéristiques électriques

Le marquage CE est accompagné du numéro d'identification de l'organisme notifié responsable de la surveillance du système de qualité (0081 pour le LCIE).

(A4) **Documents descriptifs**

Dossier technique du Rév. 1 du 24/05/2000.  
Ce document comprend 7 rubriques (8 pages).

(A5) **Conditions spéciales pour une utilisation sûre**

- Conditions d'alimentation :
  - . Version "normale" : 4 kW par élément ou tension polyphasée jusqu'à 660 V
  - . Version "compact" : 4 kW par élément ou tension polyphasée jusqu'à 550 V
- Classement en température :
  - . Version "normale" : pour une puissance maximale à la surface de l'élément de 3,01 W/cm² à sa tension nominale :
    - T3 jusqu'à + 40 °C
    - T2 jusqu'à + 60 °C
  - . Version "compact" : pour une puissance maximale à la surface de l'élément de 1,1 W/cm² à sa tension nominale :
    - T3 jusqu'à + 40 °C
    - T2 jusqu'à + 60 °C

(A6) **Exigences essentielles en ce qui concerne la sécurité et la santé**

La conception de cet équipement satisfait aux normes européennes EN 50014 et EN 50019.

**Epreuve individuelle :**

Chaque exemplaire du matériel devra subir une épreuve de rigidité diélectrique conformément aux dispositions du paragraphe 7 de la norme EN 50019.

(A1) **SCHEDULE**

(A2) **EC TYPE EXAMINATION CERTIFICATE**

**LCIE 00 ATEX 6013 X**

(A3) **Description of Equipment or Protective System**

The type FAW heater, rated at up to 660 V and 4 kW, comprises a terminal enclosure with integral mounting frame and guard and up to 6 finned tubular metal heating elements.

The equipment is manufactured in 2 models :

- "normal" model,
- "compact" model.

**The marking will be the following :**

HEATEX LIMITED

Address

Type : FAW

Serial number

Year of construction :

 II 2 G

EEx e II T4 to T2

LCIE 00 ATEX 6013 X

Do not open while energized

Electrical characteristics.

The CE marking shall be accompanied by the identification number of the notified body responsible for surveillance of the quality system (0081 for the LCIE).

(A4) **Descriptive documents :**

Technical file Rev. 1 dated 24/05/2000.  
This file includes 7 items (8 pages).

(A5) **Special conditions for safe use**

- Power rating :
  - . "Normal" model : 4 kW single or polyphase up to 660 V
  - . "Compact" model : 4 kW single or polyphase up to 550 V
- Temperature classification :
  - . "Normal" model : based on a maximum power density at the element surface of 3,01 W/cm² at its rated voltage :
    - T3 up to + 40 °C
    - T2 up to + 60 °C
  - . "Compact" model : based on a maximum power density at the element surface of 1,1 W/cm² at its rated voltage :
    - T3 up to + 40 °C
    - T2 up to + 60 °C

(A6) **Essential Health and Safety Requirements**

The design of the equipment complies to European standards EN 50014 and EN 50019.

**Routine test :**

Each single electrical apparatus must be submitted to a dielectric strength test as set forth by the dispositions of paragraph 7 of EN 50019 standard.





(A1) **ATTESTATION D'EXAMEN CE DE TYPE**  
**LCIE 00 ATEX 6013 X du 23 juin 2000**

**AVENANT 00 ATEX 6013 X/01**



(A1) **EC TYPE EXAMINATION CERTIFICATE**  
**LCIE 00 ATEX 6013 X dated June 23, 2000**

**VARIATION 00 ATEX 6013 X/01**

(A2) **DÉSIGNATION DE L'ÉQUIPEMENT OU DU**  
**SYSTÈME DE PROTECTION :**

Appareil de chauffage  
Types : FAW et FCR  
Construit par : HEATEX LIMITED

(A2) **NAME OF EQUIPMENT OR PROTECTIVE SYSTEM :**

Heater  
Type : FAW et FCR  
Manufactured by : HEATEX LIMITED

(A3) **OBJET DE L'AVENANT, DESCRIPTION DE**  
**L'APPAREIL OU DU SYSTÈME DE PROTECTION :**

- Création du type FCR.

Marquage : Inchangé. Complété par le type FCR.

(A3) **SUBJECT OF THE VARIATION, DESCRIPTION OF**  
**EQUIPMENT OR PROTECTIVE SYSTEM :**

- Creation of FCR type.

Marking : Unchanged. Completed by FCR type.

(A4) **DOCUMENTS DESCRIPTIFS :**

Dossier technique Rév. 1 du 08/06/2001.  
Ce dossier comprend 4 rubriques (5 pages).

(A4) **DESCRIPTIVE DOCUMENTS :**

Technical file Rev. 1 dated 08/06/2001.  
This file includes 4 items (5 pages).

(A5) **CONDITIONS SPÉCIALES POUR UNE UTILISATION**  
**SÛRE :**

Inchangées.

(A5) **SPECIAL CONDITIONS FOR SAFE USE :**

Unchanged.

(A6) **EXIGENCES ESSENTIELLES EN CE QUI**  
**CONCERNE LA SÉCURITÉ ET LA SANTÉ :**

Inchangées.

(A6) **ESSENTIAL HEALTH AND SAFETY**  
**REQUIREMENTS :**

Unchanged.

Fontenay-aux-Roses, le 27 juillet 2001

Le Directeur de l'organisme certificateur  
Manager of the certification body

Timbre sec/Dry seal

Par délégation  
Michel BRÉNON  
Directeur adjoint  
à la Certification

Page 1/1

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**LABORATOIRE CENTRAL DES INDUSTRIES ELECTRIQUES**

Société anonyme à Directoire et Conseil de surveillance au capital de 15 745 984 euros - RCS Nanterre B 408 363 174

33, avenue du Général Leclerc - BP n° 8 - F 92266 FONTENAY-AUX-ROSES CEDEX - Tél. : +33 1 40 95 60 60

**Electrical Test Record**

Test Ref No: W/09/114

**WO021678 / N/A**

Customer Name :

Customer ID :

Customer Reference :

Order Date: 12/06/2015

| Item/Group                           | Qty    | Description                                                                                                                                                                                                                                                |
|--------------------------------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| S99000103<br>Ex e Hazardous Area Air | 10.000 | (S99000103) FAW 1000 /110/ T3 Hazardous Area Air Warmer Rated 1KW on 110v<br>1ph 50/60hz : Floor Mounted : Dimensions 1221mm x 160mm x 186mm : ATEX / IECEx<br>Certified Ex II 2 G Ex'e' II T3 Gb Zone 1 & 2 IP67<br>Drawing 3010-01-01 & 3010-01-03 sht 2 |

**Element assembly resistance:** Phase to Neutral**Stage 1:** 12.1 TO 12.2 Ohms**Stage 3:** Ohms**Stage 2:** Ohms**Stage 4:** Ohms**Insulation resistance (cold):** 999 M Ohms

(500V dc test between all live points and earth)

**High voltage flash test****Elements:** 2000 Volts**Thermostat & ACH Circuit:** - Volts

(HV applied for 1 minute between all live points and earth)

**Insulation resistance (after HV test):** 999 M Ohms

(500V dc test between all live points and earth)

**Insulation resistance between stages:** M Ohms

(500V dc test between all live points and earth)

**Earth bonding resistance:** Ohms**Thermostat and cutout continuity:** N/A**ACH circuit resistance:** Ohms**Temperature sensor readings:**(RTD/TC/Temperature Transmitter)

|  |
|--|
|  |
|--|

**Heater Hydraulic test carried out @:****Bar G for:****minutes****Vessel Hydraulic test carried out @:****Bar G for:****minutes**

Comments

|  |
|--|
|  |
|--|

Tag Number:



Serial Number: 155033N TO 155042N

Name : Green Chris

Signed:

Date : 25/06/2015

For and On behalf of EXHEAT INDUSTRIAL LTD

**EXHEAT INDUSTRIAL LTD**

Threxton House, Threxton Road Industrial Estate, Watton, Norfolk, IP25 6NG

Tel: +44 (0)1953 886210 Fax: +44 (0) 1953 883853

Email: accounts@exheat.com

Web Site: www.exheat-industrial.com

**Certificate of Conformity****WO021678 / N/A**

Customer Name :

Customer ID :

Customer Reference :

Order Date: 12/06/2015

| Item/Group                           | Qty    | Description                                                                                                                                                                                                                                       |
|--------------------------------------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| S99000103<br>Ex e Hazardous Area Air | 10.000 | (S99000103) FAW 1000 /110/ T3 Hazardous Area Air Warmer Rated 1KW on 110v 1ph 50/60hz : Floor Mounted : Dimensions 1221mm x 160mm x 186mm : ATEX / IECEx Certified Ex II 2 G Ex'e' II T3 Gb Zone 1 & 2 IP67 Drawing 3010-01-01 & 3010-01-03 sht 2 |

**TESTS**

1. Resistance check within 7.5% of rated value.
2. High voltage flash test (cold) @ 2000 volts for 1 minute.
3. Insulation resistance (cold) > 999 @ 500 volts D.C.
4. Earth continuity check.
5. Dimensional Check.
6. Heater Hydraulic Pressure Test @ Bar G for minutes
7. Heater Pneumatic Pressure Test @ PSI for minutes
8. Vessel Pressure Test @ Bar G for minutes
9. Serial Number: 155033N TO 155042N
10. Tag Number:

"Certified that the equipment / Services detailed hereon have been inspected and tested in accordance with the contract or purchase order and unless noted hereon, conform in all respect to the specifications and drawings relevent thereto."



Name : Green Chris

Signed: 

Date : 25/06/2015

For and On behalf of EXHEAT INDUSTRIAL LTD

**EXHEAT INDUSTRIAL LTD**

Threxton House, Threxton Road Industrial Estate, Watton, Norfolk, IP25 6NG

Tel: +44 (0)1953 886210 Fax: +44 (0) 1953 883853

Email: accounts@exheat.com

Web Site: www.exheat-industrial.co.uk



## ELECTRICAL TEST RECORD

Test Procedure Ref No: WII/09/114

**Client:** Exheat

**Order/Contract No:**

**Exheat Ref:** WO008897

**Project:**

**Quantity:** 10

**Equipment:** FAW 1000/110/T3 Air wmr. 1kw 110v 1ph

**Tag No:**

**Enclosure Serial No:** 122471 to 122480

|                                     |                 |              |       |
|-------------------------------------|-----------------|--------------|-------|
| <b>Element assembly resistance:</b> | <b>Stage 1:</b> | 12.5 to 12.6 | Ohms. |
| Phase to Neutral                    | <b>Stage 2:</b> |              | Ohms. |
|                                     | <b>Stage 3:</b> |              | Ohms. |

**Insulation resistance (cold):** >999 M Ohms  
(500V dc test between all live points and earth)

**High voltage flash test:** Elements 2000 Volts  
(HV applied for 1 minute between all live points and earth)

**Thermostat & ACH Circuit** N/A Volts

**insulation resistance (after HV test):** >999 M Ohms  
(500V dc test between all live points and earth)

**Insulation resistance between stages:** N/A M Ohms  
(500V dc test between all live points and earth)

**Earth bonding resistance:** <0.02 Ohms

**Thermostat and cutout continuity:** N/A

**ACH circuit resistance:** N/A Ohms

**Temperature sensor readings:** Tag no. °C  
(RTD/TC/Temperature Transmitter)

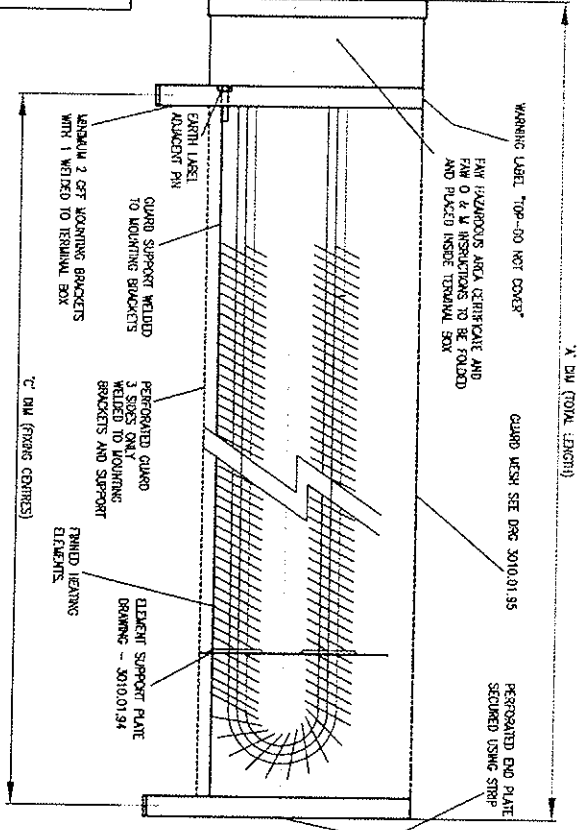
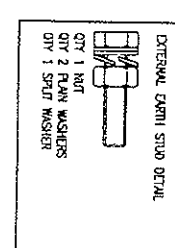
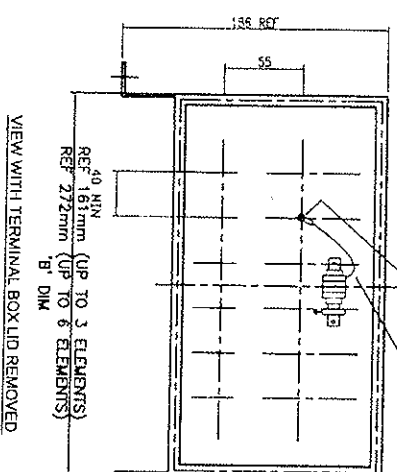
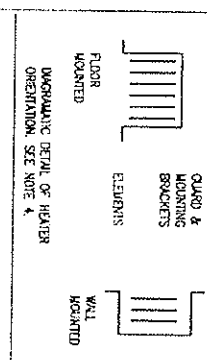
**Hydraulic Pressure test carried out @:** Bar g for: Minutes.

**Name:** Nick Pettman

**Signed:**

**Date:** 05/04/2012





- NOTES:**
1. HEATING ELEMENTS:  
UP TO 6 ELEMENTS MAXIMUM  
COMPONENT CERTIFIED EX II  
BASEEFA CERTIFICATE NO. EX 9803358U  
REFER TO DRAWING 3010.01.24 FOR DETAILS  
MAXIMUM DISTANCE BETWEEN ELEMENT SUPPORTS - 800
  2. CABLE ENTRIES:  
EX-HEAT TO DRILL CABLE ENTRIES PRIOR TO DELIVERY.
  3. POWER TERMINATION:  
CONNECTION IS MADE VIA A MAXIMUM OF 4 OFF (PLUS EARTH) EX II TERMINALS OR 1 OFF EX II BLOCK (REFER TO DATA SHEET 3010.17.20). ELEMENT PINS MAY BE LINKED USING A 54mm SECTION COPPER LINKS. THESE LINKS ARE LIMITED TO 283 A.
  4. HEATER MOUNTING:  
HEATER IS ORIENTED FOR FLOOR MOUNTING BY MANUFACTURER AND MUST BE USED IN DESIGNED ORIENTATION ONLY. FOR WALL MOUNTING, U-SHAPED MOUNTING BRACKETS MUST BE USED.
  5. MAXIMUM HEATER RATING:  
4kW SINGLE OR POLYPHASE UP TO 660V
  6. HEATER SPECIFICATION:  
Exe II T3 INCREASED SAFETY HEATER  
ENS0014 & ENS0019 1977
  7. ELECTRICAL CLEARANCE:  
10mm MINIMUM CLEARANCE DISTANCE SHALL BE MAINTAINED BETWEEN LIVE CONDUCTING PARTS AND LIVE CONDUCTING PARTS AND EARTHED METAL.
  8. ASSOCIATED DRAWINGS:  
NAMEPLATE - 3010.17.41  
SCHEDULE OF ROUTINE ELECTRICAL TESTS - 3010.17.87  
FINAL INSPECTION TO WINDUP/30  
ADDITIONAL DATA SHEET - 3010.17.90  
WIRING DIAGRAM - 3010.01.03  
HEATING ELEMENT - 3010.01.04  
ELEMENT SUPPORT DRAWING - 3010.01.94  
TERMINAL BOX AND LID DRAWING - 3010.01.24  
NAME PLATE DRAWING - 3010.01.41  
GUARD & BOX ASSEMBLY DRAWING - 3010.02.91  
GUARD DETAIL DRAWING - 3010.01.93  
COVER GASKET SIZE - 3010.01.98  
TOP DO NOT COVER LABEL DRAWING - 3010.01.99

| ITEM | MODEL    | T CLASS | WATTS | VOLTS          | DIM 'A' | DIM 'B' | DIM 'C' | WEIGHT |
|------|----------|---------|-------|----------------|---------|---------|---------|--------|
| 1    | FAW-250  | T3      | 250   | 254            | 971     | 161     | 890     | 8kg    |
| 2a   | FAW-500  | T3      | 500   | 254            | 971     | 161     | 860     | 10kg   |
| 2b   | FAW-500  | T3      | 500   | 110            | 1741    | 272     | 1640    | 15kg   |
| 3    | FAW-750  | T3      | 750   | 254/440 or 110 | 971     | 161     | 860     | 12kg   |
| 4    | FAW-1000 | T3      | 1000  | 254/440 or 110 | 1221    | 161     | 1145    | 14kg   |
| 5    | FAW-1500 | T3      | 1500  | 254/440 or 110 | 1741    | 161     | 1840    | 20kg   |
| 6    | FAW-2000 | T3      | 2000  | 254 or 110     | 1741    | 272     | 1640    | 32kg   |
| 7    | FAW-2500 | T3      | 2500  | 254            | 1741    | 272     | 1640    | 38kg   |
| 8    | FAW-3000 | T3      | 3000  | 254/440        | 1741    | 272     | 1840    | 42kg   |
| 9    | FAW-250  | T4      | 250   | 254            | 1886    | 161     | 1784    | 13kg   |
| 10   | FAW-500  | T4      | 500   | 254            | 1886    | 161     | 1784    | 17kg   |
| 11   | FAW-750  | T4      | 750   | 254/440        | 1886    | 161     | 1784    | 21kg   |
| 12   | FAW-1000 | T4      | 1000  | 254            | 1886    | 272     | 1784    | 33kg   |
| 13   | FAW-1250 | T4      | 1250  | 254            | 1886    | 272     | 1784    | 38kg   |
| 14   | FAW-1500 | T4      | 1500  | 254/440        | 1886    | 272     | 1784    | 42kg   |

**EXHEAT LTD**  
NORRIDGE ENGLAND

**BSI**  
BRITISH STANDARD  
BS 5938:2000  
WIRING REGULATIONS  
PART 6:2000  
FIXED WIRING

**EXHEAT LTD**  
FAM SERIES HAZARDOUS AREA AIR WARMER  
GENERAL ARRANGEMENT

STOCK CODE NO. 3010-01-01  
SHEET NO. 01 of 01  
REV 07

DATE 01/01/01

WWW.EXHEAT.COM







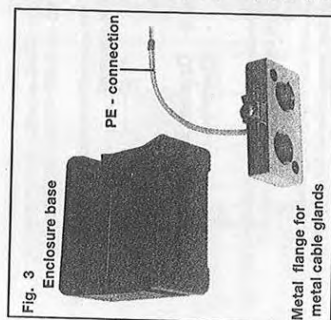


Fig. 3  
Enclosure base

PE - connection

Metal flange for  
metal cable glands

## 7 Maintenance/Service

*The relevant national regulations which apply to the maintenance/service of electrical apparatus in explosive atmospheres, shall be observed (e. g. IEC 60079-17).*

*Before opening the enclosure make sure that the apparatus is disconnected from the voltage, or take the appropriate protective measures.*

The required maintenance intervals depend on the respective application and will therefore have to be determined by the user dependent on the conditions of use.

When servicing the apparatus, particularly those parts that are decisive for the type of protection against explosion, will have to be checked (e. g. intactness of flameproof enclosed components, enclosure, cable glands, efficacy of the cover gaskets).

If during servicing repairs prove to be necessary, section 8 of these operating instructions will have to be observed.

## 8 Repairs / Overhaul / Modification

Repairs may only be carried out with genuine CCH/CEAG spare parts.

In case of a damaged flameproof enclosure, only its replacement is permitted. In case of doubt, the respective apparatus will have to be returned for repair to CCH/CEAG.

*Repairs that affect the explosion protection, may only be carried out by CCH/CEAG or a qualified electrician in compliance with the applicable national rules.*

*Modifications to the apparatus or changes of its design are not permitted.*

Except for the mounting of additional cable entries in accordance with the approval of the apparatus.

## 9 Disposal / Recycling

When the apparatus is disposed of, the respective national regulations on waste disposal will have to be observed.

In order to facilitate the recycling of individual components, plastic parts have been provided with the identification mark of the plastic material used.

Subject to modifications or supplement of the product range.

## 6.3 Cable entries (KLE); blanking plugs

*Generally, only certified cable entries and blanking plugs are permitted for use.*

*Flexible cables shall be used with trumpet-shaped cable glands or other suitable entries with additional pull-relief.*

When using cable entries with a lower IP protection than that which applies to the device (see page 6, technical data), the IP protection of the whole device will be reduced.

The mounting directives applicable to the cable entries used shall be observed.

Unused holes shall be closed with a certified blanking plug in order to establish the minimum protection category.

In case of sealing inserts that are cut out, it shall be ensured that the insert is properly adapted to the cable diameter.

Care has to be taken that when fitting the cable entries, sealing inserts appropriate to the cable diameter are used.

In order to ensure the required minimum protection category, the cable glands are to be tightened down.

*Overtightening might impair the protection.*

All vacant metric CEAG cable entries shall be closed with the certified CEAG blanking plug for metric cable entries.

## 6.4 Flange and metal plates \*

If flange plates have to be removed in case of installation switches (e.g. for drilling entry holes),

## 6.5 Closing the device/ cover closure

The enclosure cover shall be fitted so that the protective collar is on the upper part.

*Any foreign matter shall be removed from the apparatus.*

In order to ensure the required minimum protection category, the cover screws are to be tightened down.

*Overtightening might impair the protection category.*

## 6.6 Taking into operation

Prior to taking the apparatus into operation, the tests specified in the relevant national regulations will have to be carried out. Apart from that, the correct functioning and installation of the apparatus in accordance with these operating instructions and other applicable regulations will have to be checked.

*Testing the switch socket with a hard object (screwdriver) is not permitted.*

*Incorrect installation and use of the installation switches can invalidate the guarantee.*





## Translation

# (1) EC-Type Examination Certificate

(2) - Directive 94/9/EC -  
Equipment and protective systems intended for use  
in potentially explosive atmospheres

(3) **BVS 09 ATEX E 034**

(4) **Equipment:** Fluorescent lighting fixture type eLL\* \* \* \* \*

(5) **Manufacturer:** Cooper Crouse-Hinds GmbH (formerly CEAG)

(6) **Address:** 69412 Eberbach, Germany

(7) The design and construction of this equipment and any acceptable variation thereto are specified in the appendix to this type examination certificate.

(8) The certification body of DEKRA EXAM GmbH, notified body no. 0158 in accordance with Article 9 of the Directive 94/9/EC of the European Parliament and the Council of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Annex II to the Directive.  
The examination and test results are recorded in the test and assessment report BVS PP 09.2044 EG.

(9) The Essential Health and Safety Requirements are assured by compliance with:

|                 |                         |
|-----------------|-------------------------|
| EN 60079-0:2006 | General requirements    |
| EN 60079-1:2004 | Flameproof Enclosure    |
| EN 60079-7:2007 | Increased Safety        |
| EN 61241-0:2006 | General requirements    |
| EN 61241-1:2004 | Protection by Enclosure |

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the appendix to this certificate.

(11) This EC-Type Examination Certificate relates only to the design, examination and tests of the specified equipment in accordance to Directive 94/9/EC.  
Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate

(12) The marking of the equipment shall include the following:



**II 2G Ex de IIC T4**  
**II 2D Ex tD A21 IP66 T80°C**

**DEKRA EXAM GmbH**

Bochum, dated 6<sup>th</sup> April 2009

Signed: Simanski

Certification body

Signed: Dr. Wittler

Special services unit

(13)

Appendix to

(14)

## EC-Type Examination Certificate

**BVS 09 ATEX E 034**

(15) 15.1 Subject and type

Fluorescent lighting fixture type eLL\* \* \* \* \*

|       |                                             |
|-------|---------------------------------------------|
| None  | : Standard                                  |
| ZB    | : suitable for emergency power supply       |
| 18    | : 1x 18W                                    |
| 18/18 | : 2x 18W                                    |
| 36    | : 1x 36W                                    |
| 36/36 | : 2x 36W                                    |
| 58    | : 1x 58W                                    |
| 58/58 | : 2x 58W                                    |
| 0     | : bi-pin lamp cap type G13                  |
| 3     | : one-pin lamp cap type FA6                 |
| 08    | : stainless steel enclosure                 |
| 92    | : plastic enclosure or pole mounting        |
| K     | : plastic enclosure                         |
| M     | : pole mounted light with plastic enclosure |
| S     | : stainless steel enclosure                 |

### 15.2 Description

The fluorescent lighting fixture type eLL\* \* \* \* \* is an explosion-protected electrical apparatus that accommodates single or twin fluorescent luminaires with either lamp cap FA6 (one-pin) or lamp cap G13 (bi-pin).

Only separately certified EVGs, either one single, one double or two single, are used as electronic ballast (cf. PTB 05 ATEX 2018 U).

The luminaires may be replaced inside the potentially explosive atmosphere if the fluorescent lighting fixture is equipped with a separately certified light switch (cf. PTB 00 ATEX 1105 U) which disconnects the light at all poles or if the voltage of the lighting fixture is set to zero before changing the luminaire. The variant without a light switch contains a relevant warning on the outside of the enclosure.

The lighting fixtures that are equipped with a luminaire size T12 (38mm diameter) are exclusively used with mechanical protection.

The enclosure of the fixture consists of either glass-mat reinforced polyester or of stainless steel; the light-permitting diffuser is made of polycarbonate.

### 15.3 Parameters

#### 15.3 Electrical data

One-pin lamp cap type FA6

| Type of luminaire  | Type of electronic ballast | Nominal voltage                  | Frequency   |
|--------------------|----------------------------|----------------------------------|-------------|
| eLL * ** 318/18    | 1x EVG 05 218              | 110V – 254V AC<br>195V – 250V DC | 47Hz – 63Hz |
| eLL * ** 318/18    | 1x EVG 05 217              | 110V – 254V AC<br>110V – 127V DC | 47Hz – 63Hz |
| eLL * ** 336/36    | 1x EVG 05 236              | 110V – 254V AC<br>110V – 250V DC | 47Hz – 63Hz |
| eLL * ** 336       | 1x EVG 05 136              | 110V – 254V AC<br>110V – 250V DC | 47Hz – 63Hz |
| eLL * ** 336/36    | 2x EVG 05 136              | 110V – 254V AC<br>110V – 250V DC | 47Hz – 63Hz |
| eLL * ** 358/58    | 1x EVG 05 258              | 220V – 254V AC<br>195V – 250V DC | 47Hz – 63Hz |
| eLL * ** 358       | 1x EVG 05 158              | 110V – 254V AC<br>110V – 250V DC | 47Hz – 63Hz |
| eLL * ** 358/58    | 2x EVG 05 158              | 110V – 254V AC<br>110V – 250V DC | 47Hz – 63Hz |
| eLL * ** 336/36 ZB | 2x EVG 05 136              | 110V – 254V AC<br>110V – 250V DC | 47Hz – 63Hz |
| eLL * ** 358/58 ZB | 2x EVG 05 158              | 110V – 254V AC<br>110V – 250V DC | 47Hz – 63Hz |

Bi-pin lamp cap type G13

| Type of luminaire  | Type of electronic ballast | Nominal voltage                  | Frequency   |
|--------------------|----------------------------|----------------------------------|-------------|
| eLL * ** 018/18    | 1x EVG 05 218              | 110V – 254V AC<br>195V – 250V DC | 47Hz – 63Hz |
| eLL * ** 018/18    | 1x EVG 05 217              | 110V – 254V AC<br>110V – 127V DC | 47Hz – 63Hz |
| eLL * ** 036/36    | 1x EVG 05 236              | 110V – 254V AC<br>110V – 250V DC | 47Hz – 63Hz |
| eLL * ** 036       | 1x EVG 05 136              | 110V – 254V AC<br>110V – 250V DC | 47Hz – 63Hz |
| eLL * ** 036/36    | 2x EVG 05 136              | 110V – 254V AC<br>110V – 250V DC | 47Hz – 63Hz |
| eLL * ** 058/58    | 1x EVG 05 258              | 220V – 254V AC<br>195V – 250V DC | 47Hz – 63Hz |
| eLL * ** 058       | 1x EVG 05 158              | 110V – 254V AC<br>110V – 250V DC | 47Hz – 63Hz |
| eLL * ** 058/58    | 2x EVG 05 158              | 110V – 254V AC<br>110V – 250V DC | 47Hz – 63Hz |
| eLL * ** 036/36 ZB | 2x EVG 05 136              | 110V – 254V AC<br>110V – 250V DC | 47Hz – 63Hz |

|                    |               |                                  |             |
|--------------------|---------------|----------------------------------|-------------|
| eLL * ** 058/58 ZB | 2x EVG 05 158 | 110V – 254V AC<br>110V – 250V DC | 47Hz – 63Hz |
|--------------------|---------------|----------------------------------|-------------|

15.4 Thermal data

Ambient temperature range if  $U < 220V$

$-25^{\circ}C \leq T_a \leq +50^{\circ}C$

Ambient temperature range if  $U \geq 220V$

$-25^{\circ}C \leq T_a \leq +55^{\circ}C$

(16) Test and assessment report

BVS PP 09.2044 EG as of 06.04.2009

(17) Special conditions for safe use

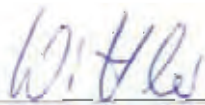
None

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We confirm the correctness of the translation from the German original.  
In the case of arbitration only the German wording shall be valid and binding.

44809 Bochum, 27.04.2009  
BVS-Kr/Ld/Ar A 20090147

**DEKRA EXAM GmbH**



Certification body



Special services unit





## Translation

# 1st Supplement

(Supplement in accordance with Directive 94/9/EC Annex III number 6)

## to the EC-Type Examination Certificate BVS 09 ATEX E 034

**Equipment:** Fluorescent lighting fixture type eLL\* \*\* \*\*\*/\*\* \*

**Manufacturer:** Cooper Crouse-Hinds GmbH

**Address:** 69412 Eberbach, Germany

### Description

The lighting fixture type eLL\* \*\* \*\*\*/\*\* CG-S is equipped with a separately certified CG-S module (cf. PTB 04 ATEX 2110 U), which can be connected to the central battery system (ZBS) of CEAG.

The lighting fixture type eLL\* \*\* \*\*\*/\*\* NIB is provided with an emergency light device which consists of one or two separately certified EVGs (EVG 05... or EVG 09...) in conjunction with the supply unit VE 97..., and/or the power supply / emergency light unit VE/EVG 05..., as well as a battery box type eBK02 or eBS09 (BVS 09 ATEX E 044 X) with an inserted battery of type 2710-3 (BVS 09 ATEX E 042 U).

The luminaires type eLL\* \*\* \*\*\*/\*\* can be modified according to the descriptive documents as mentioned in the pertinent test and assessment report.

### Subject and type

Fluorescent lighting fixture type eLL\* \*\* \*\*\*/\*\* \*

|  |       |                                                         |
|--|-------|---------------------------------------------------------|
|  | None  | : Standard                                              |
|  | ZB    | : suitable for emergency power supply (central battery) |
|  | CG-S  | : Monitoring module                                     |
|  | NIB   | : intelligent single battery system                     |
|  | 18    | : 1x 18W                                                |
|  | 18/18 | : 2x 18W                                                |
|  | 36    | : 1x 36W                                                |
|  | 36/36 | : 2x 36W                                                |
|  | 58    | : 1x 58W                                                |
|  | 58/58 | : 2x 58W                                                |
|  | 0     | : bi-pin lamp cap type G13                              |
|  | 3     | : one-pin lamp cap type FA6                             |
|  | 08    | : stainless steel enclosure                             |
|  | 92    | : plastic enclosure or pole mounting                    |
|  | K     | : plastic enclosure                                     |
|  | M     | : pole mounted light with plastic enclosure             |
|  | S     | : stainless steel enclosure                             |

# Electrical data

## One-pin lamp cap type FA6

| Type of luminaire  | Type of electronic ballast                             | Nominal voltage                  | Frequency   |
|--------------------|--------------------------------------------------------|----------------------------------|-------------|
| eLL* ** 318/18     | 1x EVG 05 218 resp.<br>1x EVG 09 218                   | 110V – 254V AC<br>195V – 250V DC | 50Hz – 60Hz |
| eLL* ** 318/18     | 1x EVG 05 217 resp.<br>1x EVG 09 217                   | 110V – 254V AC<br>110V – 127V DC | 50Hz – 60Hz |
| eLL* ** 336/36     | 1x EVG 05 236 resp.<br>1x EVG 09 236                   | 110V – 254V AC<br>110V – 250V DC | 50Hz – 60Hz |
| eLL* ** 336        | 1x EVG 05 136 resp.<br>1x EVG 09 136                   | 110V – 254V AC<br>110V – 250V DC | 50Hz – 60Hz |
| eLL* ** 336/36     | 2x EVG 05 136 resp.<br>2x EVG 09 136                   | 110V – 254V AC<br>110V – 250V DC | 50Hz – 60Hz |
| eLL* ** 358/58     | 1x EVG 05 258 resp.<br>1x EVG 09 258                   | 220V – 254V AC<br>195V – 250V DC | 50Hz – 60Hz |
| eLL* ** 358        | 1x EVG 05 158 resp.<br>1x EVG 09 158                   | 110V – 254V AC<br>110V – 250V DC | 50Hz – 60Hz |
| eLL* ** 358/58     | 2x EVG 05 158 resp.<br>2x EVG 09 158                   | 110V – 254V AC<br>110V – 250V DC | 50Hz – 60Hz |
| eLL* ** 336/36 ZB  | 2x EVG 05 136 resp.<br>2x EVG 09 136                   | 110V – 254V AC<br>110V – 250V DC | 50Hz – 60Hz |
| eLL* ** 358/58 ZB  | 2x EVG 05 158 resp.<br>2x EVG 09 158                   | 110V – 254V AC<br>110V – 250V DC | 50Hz – 60Hz |
| eLL* ** 318/18 NIB | 1x VE/EVG 05 218 resp.<br>1x VE/EVG 09 218             | 220V – 254V AC<br>110V – 127V AC | 50Hz – 60Hz |
| eLL* ** 336 NIB    | 1x VE 97 236 +<br>1x EVG 05 136 resp.<br>1x EVG 09 136 | 220V – 254V AC<br>110V – 127V AC | 50Hz – 60Hz |
| eLL* ** 336/36 NIB | 1x VE 97 236 +<br>1x EVG 05 236 resp.<br>1x EVG 09 236 | 220V – 254V AC<br>110V – 127V AC | 50Hz – 60Hz |

## Bi-pin lamp cap type G13

| Type of luminaire | Type of electronic ballast           | Nominal voltage                  | Frequency   |
|-------------------|--------------------------------------|----------------------------------|-------------|
| eLL* ** 018/18    | 1x EVG 05 218 resp.<br>1x EVG 09 218 | 110V – 254V AC<br>195V – 250V DC | 50Hz – 60Hz |
| eLL* ** 018/18    | 1x EVG 05 217 resp.<br>1x EVG 09 217 | 110V – 254V AC<br>110V – 127V DC | 50Hz – 60Hz |
| eLL* ** 036/36    | 1x EVG 05 236 resp.<br>1x EVG 09 236 | 110V – 254V AC<br>110V – 250V DC | 50Hz – 60Hz |
| eLL* ** 036       | 1x EVG 05 136 resp.<br>1x EVG 09 136 | 110V – 254V AC<br>110V – 250V DC | 50Hz – 60Hz |
| eLL* ** 036/36    | 2x EVG 05 136 resp.<br>2x EVG 09 136 | 110V – 254V AC<br>110V – 250V DC | 50Hz – 60Hz |

|                     |                                                        |                                  |             |
|---------------------|--------------------------------------------------------|----------------------------------|-------------|
| eLL* ** 058/58      | 1x EVG 05 258 resp.<br>1x EVG 09 258                   | 220V – 254V AC<br>195V – 250V DC | 50Hz – 60Hz |
| eLL* ** 058         | 1x EVG 05 158 resp.<br>1x EVG 09 158                   | 110V – 254V AC<br>110V – 250V DC | 50Hz – 60Hz |
| eLL* ** 058/58      | 2x EVG 05 158 resp.<br>2x EVG 09 158                   | 110V – 254V AC<br>110V – 250V DC | 50Hz – 60Hz |
| eLL* ** 036/36 ZB   | 2x EVG 05 136 resp.<br>2x EVG 09 136                   | 110V – 254V AC<br>110V – 250V DC | 50Hz – 60Hz |
| eLL* ** 058/58 ZB   | 2x EVG 05 158 resp.<br>2x EVG 09 158                   | 110V – 254V AC<br>110V – 250V DC | 50Hz – 60Hz |
| eLL* ** 018/18 NIB  | 1x VE/EVG 05 218                                       | 220V – 254V AC<br>110V – 127V AC | 50Hz – 60Hz |
| eLL* ** 036/36 NIB  | 1x VE 97 236 +<br>1x EVG 05 236 resp.<br>1x EVG 09 236 | 220V – 254V AC<br>110V – 127V AC | 50Hz – 60Hz |
| eLL* ** 036 NIB     | 1x VE 97 236 +<br>1x EVG 05 136 resp.<br>1x EVG 09 136 | 220V – 254V AC<br>110V – 127V AC | 50Hz – 60Hz |
| eLL* ** 018/18 CG-S | 1x EVG 05 218 resp.<br>1x EVG 09 218<br>+CG-S Modul    | 220V – 254V AC<br>195V – 250V DC | 50Hz – 60Hz |
| eLL* ** 036/36 CG-S | 1x EVG 05 236 resp.<br>1x EVG 09 236<br>+CG-S Modul    | 220V – 254V AC<br>195V – 250V DC | 50Hz – 60Hz |
| eLL* ** 058/58 CG-S | 1x EVG 05 258 resp.<br>1x EVG 09 258<br>+CG-S Modul    | 220V – 254V AC<br>195V – 250V DC | 50Hz – 60Hz |

#### Thermal data

Ambient temperature range if  $U < 220V$

$-25^{\circ}C \leq T_a \leq +50^{\circ}C$

Ambient temperature range if  $U \geq 220V$

$-25^{\circ}C \leq T_a \leq +55^{\circ}C$

The Essential Health and Safety Requirements of the modified equipment are assured by compliance with:

|                  |                         |
|------------------|-------------------------|
| EN 60079-0:2006  | General requirements    |
| EN 60079-1:2007  | Flameproof Enclosure    |
| EN 60079-7:2007  | Increased Safety        |
| EN 60079-11:2007 | Intrinsic safety        |
| EN 60079-18:2004 | Encapsulation           |
| EN 61241-0:2006  | General requirements    |
| EN 61241-1:2004  | Protection by Enclosure |

The marking of the equipment shall include the following:

**II 2G Ex de IIC T4** for types without addition; CG-S and ZB  
 **II 2G Ex de mb ib IIC T4** for type NIB  
**II 2D Ex tD A21 IP66 T80°C**

Special conditions for safe use

Still not relevant

Test and assessment report

BVS PP 09.2044 EG as of 23.09.2009

**DEKRA EXAM GmbH**

Bochum, dated 23. September 2009

Signed: Simanski

Signed: Dr. Eickhoff

\_\_\_\_\_  
Certification body

\_\_\_\_\_  
Special services unit

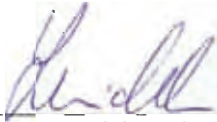
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We confirm the correctness of the translation from the German original.  
In the case of arbitration only the German wording shall be valid and binding.

44809 Bochum, 14.10.2009  
BVS-Kr/Ld/Ar E 1567/09

**DEKRA EXAM GmbH**

  
\_\_\_\_\_  
Certification body

  
\_\_\_\_\_  
Special services unit



## Translation

# (1) 2. Supplement to the EC-Type Examination Certificate

- (2) Equipment and protective systems intended for use in potentially explosive atmospheres - Directive 94/9/EC Supplement accordant with Annex III number 6
- (3) No. of EC-Type Examination Certificate: **BVS 09 ATEX E 034**
- (4) Equipment: **Flourescent lighting fixture type eLL . 92 ... / ..**
- (5) Manufacturer: **Cooper Crouse-Hinds GmbH**
- (6) Address: **69412 Eberbach, Germany**
- (7) The design and construction of this equipment and any acceptable variation thereto are specified in the appendix to this supplement.
- (8) The certification body of DEKRA EXAM GmbH, notified body no. 0158 in accordance with Article 9 of the Directive 94/9/EC of the European Parliament and the Council of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Annex II to the Directive. The examination and test results are recorded in the test and assessment report BVS PP 09.2044 EG.
- (9) The Essential Health and Safety Requirements are assured by compliance with:
- |                  |                          |
|------------------|--------------------------|
| EN 60079-0:2006  | General requirements     |
| EN 60079-1:2007  | Flameproof enclosure 'd' |
| EN 60079-7:2007  | Increased safety 'e'     |
| EN 60079-11:2007 | Intrinsic safety 'i'     |
| EN 60079-18:2009 | Encapsulation 'm'        |
| EN 61241-0:2006  | General requirements     |
| EN 61241-1:2004  | Protection by enclosures |
- (10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the appendix to this certificate.
- (11) This supplement to the EC-Type Examination Certificate relates only to the design, examination and tests of the specified equipment in accordance to Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.
- (12) The marking of the equipment shall include the following:



**II 2G Ex de IIC T4** (Type without option; CG-S; ZB; DCA)

**II 2G Ex de mb ib IIC T4** (type NIB)

**II 2D Ex tD A21 IP66 T80°C**

DEKRA EXAM GmbH  
Bochum, dated 14.02.2012

Signed: Simanski

Certification body

Signed: Dr. Wittler

Special services unit

- (13) Appendix to
- (14) **2. Supplement to the EC-Type Examination Certificate  
BVS 09 ATEX E 034**
- (15) 15.1 Subject and type

Fluorescent lighting fixture

type eLL\* \*\* \*\*\*/\*\* \*

|       |                                                         |
|-------|---------------------------------------------------------|
| None  | : Standard                                              |
| ZB    | : suitable for emergency power supply (central battery) |
| CG-S  | : Monitoring module                                     |
| NIB   | : intelligent single battery system                     |
| DCA   | : DC - Disconnection                                    |
| 18    | : 1x 18W                                                |
| 18/18 | : 2x 18W                                                |
| 36    | : 1x 36W                                                |
| 36/36 | : 2x 36W                                                |
| 58    | : 1x 58W                                                |
| 58/58 | : 2x 58W                                                |
| 0     | : bi-pin lamp cap type G13                              |
| 3     | : one-pin lamp cap type FA6                             |
| 08    | : type coding of stainless steel enclosure              |
| 92    | : type coding of plastic enclosure or pole mounting     |
| K     | : plastic enclosure                                     |
| M     | : pole mounted light with plastic enclosure             |
| S     | : stainless steel enclosure                             |

## 15.2 Description

The fluorescent lighting fixture type eLL\* \*\* \*\*\*/\*\* \* is an explosion-protected electrical apparatus that accommodates single or twin fluorescent luminaires with either lamp cap FA6 (one-pin) or lamp cap G13 (bi-pin).

Only separately certified EVGs, either one single, one double or two single, are used as electronic ballast, such as: EVG 05... (PTB 05 ATEX 2018 U), EVG 09... (BVS 09 ATEX E 054 U), VE/EVG 05 (BVS 09 ATEX E 043 U) or VE 97... (BVS 09 ATEX E 043 U).

The luminaires may be replaced inside the potentially explosive atmosphere if the fluorescent lighting fixture is equipped with a separately certified light switch (cf. PTB 00 ATEX 1105 U or PTB 98 ATEX 1033 U) which disconnects the light at all poles or if the voltage of the lighting fixture is set to zero before changing the luminaire. The variant without a light switch contains a relevant warning on the outside of the enclosure.

The lighting fixtures that are equipped with a luminaire size T12 (38mm diameter) are exclusively used with mechanical protection.

The enclosure of the fixture consists of either glass-mat reinforced polyester or of stainless steel; the light-permitting diffuser is made of polycarbonate.

The lighting fixture type eLL\* \*\* \*\*\*/\*\* \* ZB is intended to be connected to a central battery system or emergency power supply. If the light operates on twin luminaires, each luminaire is supplied by a separate circuit via its own electronic ballast.

The lighting fixture type eLL\* \*\* \*\*\*/\*\* \* CG-S is equipped with a separately certified CG-S module (PTB 04 ATEX 2110 U), which can be connected to the central battery system (ZBS) of CEAG.

The lighting fixture type eLL\* \*\* \*\*\*/\*\* \* NIB is provided with an emergency light device which consists of one or two separately certified EVGs (EVG 05... or EVG 09...) in conjunction with the supply unit VE 97..., and/or the power supply / emergency light unit VE/EVG 05..., as well as a battery box type eBK02 or eBS09 (BVS 09 ATEX E 044 X) with an inserted battery of type 2710-3 (BVS 09 ATEX E 042 U).

The reason of the supplement is the modification of the used ballast (in acc. to the table in clause 15.3).



### 15.3 Parameters

#### 15.3.1 Electrical data

One-pin lamp cap type FA6

| Type of luminaire  | Type of electronic ballast                  | Nominal voltage                  | Frequency   |
|--------------------|---------------------------------------------|----------------------------------|-------------|
| eLL* ** 318/18     | 1x EVG 09 218                               | 110V – 254V AC<br>195V – 250V DC | 50Hz – 60Hz |
| eLL* ** 336        | 1x EVG 09 136                               | 110V – 254V AC<br>110V – 250V DC | 50Hz – 60Hz |
| eLL* ** 336/36     | 1x EVG 09 236 bzw.<br>2x EVG 09 136         | 110V – 254V AC<br>110V – 250V DC | 50Hz – 60Hz |
| eLL* ** 358        | 1x EVG 09 158                               | 110V – 254V AC<br>110V – 250V DC | 50Hz – 60Hz |
| eLL* ** 358/58     | 1x EVG 09 258 bzw.<br>2x EVG 09 158         | 110V – 254V AC<br>110V – 250V DC | 50Hz – 60Hz |
| eLL* ** 336/36 ZB  | 2x EVG 09 136                               | 110V – 254V AC<br>110V – 250V DC | 50Hz – 60Hz |
| eLL* ** 358/58 ZB  | 2x EVG 09 158                               | 110V – 254V AC<br>110V – 250V DC | 50Hz – 60Hz |
| eLL* ** 318/18 NIB | 1x VE/EVG 05 218 bzw.<br>2 x VE/EVG 05218-1 | 220V – 254V AC<br>110V – 127V AC | 50Hz – 60Hz |
| eLL* ** 336 NIB    | 1x VE 97 236 +<br>1x EVG 09 136             | 220V – 254V AC<br>110V – 127V AC | 50Hz – 60Hz |
| eLL* ** 336/36 NIB | 1x VE 97 236 +<br>1x EVG 09 236             | 220V – 254V AC<br>110V – 127V AC | 50Hz – 60Hz |

# Bi-pin lamp cap type G13

| Type of luminaire   | Type of electronic ballast                 | Nominal voltage                  | Frequency   |
|---------------------|--------------------------------------------|----------------------------------|-------------|
| eLL* ** 018/18      | 1x EVG 05 218 bzw.<br>1x EVG 09 218        | 110V – 254V AC<br>110V – 250V DC | 50Hz – 60Hz |
| eLL* ** 036         | 1x EVG 09 136                              | 110V – 254V AC<br>110V – 250V DC | 50Hz – 60Hz |
| eLL* ** 036/36      | 1x EVG 09 236 bzw.<br>2x EVG 09 136        | 220V – 254V AC<br>195V – 250V DC | 50Hz – 60Hz |
| eLL* ** 058         | 1x EVG 09 158                              | 220V – 254V AC<br>195V – 250V DC | 50Hz – 60Hz |
| eLL* ** 058/58      | 1x EVG 09 258 bzw.<br>2x EVG 09 158        | 110V – 254V AC<br>110V – 250V DC | 50Hz – 60Hz |
| eLL* ** 036/36 ZB   | 2x EVG 09 136                              | 110V – 254V AC<br>110V – 250V DC | 50Hz – 60Hz |
| eLL* ** 058/58 ZB   | 2x EVG 09 158                              | 220V – 254V AC<br>195V – 250V DC | 50Hz – 60Hz |
| eLL* ** 018/18 NIB  | 1x VE/EVG 05 218 bzw.<br>1x VE/EVG 05218-1 | 220V – 254V AC<br>110V – 127V AC | 50Hz – 60Hz |
| eLL* ** 036/36 NIB  | 1x VE 97 236 +<br>1x EVG 09 236            | 220V – 254V AC<br>110V – 127V AC | 50Hz – 60Hz |
| eLL* ** 036 NIB     | 1x VE 97 236 +<br>1x EVG 09 136            | 220V – 254V AC<br>110V – 127V AC | 50Hz – 60Hz |
| eLL* ** 018/18 CG-S | 1x EVG 09 218<br>+CG-S Modul               | 220V – 254V AC<br>195V – 250V DC | 50Hz – 60Hz |
| eLL* ** 036/36 CG-S | 1x EVG 09 236<br>+CG-S Modul               | 220V – 254V AC<br>195V – 250V DC | 50Hz – 60Hz |
| eLL* ** 058/58 CG-S | 1x EVG 09 258<br>+CG-S Modul               | 220V – 254V AC<br>195V – 250V DC | 50Hz – 60Hz |
| eLL* ** 018/18 DCA  | 1x EVG 09218 DCA<br>Version                | 110V – 254V AC<br>195V – 250V DC | 50Hz – 60Hz |
| eLL* ** 036/36 DCA  | 1x EVG 09236 DCA<br>Version                | 110V – 254V AC<br>195V – 250V DC | 50Hz – 60Hz |
| eLL* ** 058/58 DCA  | 1x EVG 09258 DCA<br>Version                | 110V – 254V AC<br>195V – 250V DC | 50Hz – 60Hz |

## 15.3.2 Thermal data

Type eLL\* \*\* \*\*\*/\*\*

Ambient temperature range if  $U < 220V$

$-25^{\circ}C \leq T_a \leq +50^{\circ}C$

Ambient temperature range if  $U \geq 220V$

$-25^{\circ}C \leq T_a \leq +55^{\circ}C$

Type eLL\* \*\* \*\*\*/\*\* NIB

Ambient temperature range if  $U < 220V$

$-25^{\circ}C \leq T_a \leq +50^{\circ}C$

Type eLL\* \*\* 058/58

Ambient temperature range if  $U < 220V$

$-25^{\circ}C \leq T_a \leq +40^{\circ}C$

## (16) Test and Assessment Report



(16) Test and Assessment Report

BVS PP 09.2044 EG as of 14.02.2012

(17) Special conditions for safe use Installation instructions

17.1 Special conditions to be listed in EC Type Certificate

Still not relevant

17.2 Additional conditions

The lighting fixtures that contain luminaires of 38 mm diameter can only be used in special conditions (mechanically protected mounting of the fixture) and are marked accordingly. In areas with excess condensation of paint spray or dirt a protective foil type "SLIME", manufactured by 3M, may be used which can be wiped off and rinsed. However, such lighting fixtures may not be installed and operated in hazardous areas with combustible dust.

We confirm the correctness of the translation from the German original.  
In the case of arbitration only the German wording shall be valid and binding.

DEKRA EXAM GmbH  
44809 Bochum, 14.02.2012  
BVS-Yil/Sch A 20110067



Certification body



Special services unit



## Translation

# (1) 3. Supplement to the EC-Type Examination Certificate

- (2) Equipment and protective systems intended for use in potentially explosive atmospheres - Directive 94/9/EC Supplement accordant with Annex III number 6
- (3) No. of EC-Type Examination Certificate: **BVS 09 ATEX E 034**
- (4) Equipment: **Leuchtstofflampe type eLL\* \*\* \*\*\*/\*\* \***
- (5) Manufacturer: **Cooper Crouse-Hinds GmbH**
- (6) Address: **Neuer Weg Nord 49, 69412 Eberbach, Germany**
- (7) The design and construction of this equipment and any acceptable variation thereto are specified in the appendix to this supplement.
- (8) The certification body of DEKRA EXAM GmbH, notified body no. 0158 in accordance with Article 9 of the Directive 94/9/EC of the European Parliament and the Council of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Annex II to the Directive. The examination and test results are recorded in the test and assessment report BVS PP 09.2044 EG.
- (9) The Essential Health and Safety Requirements are assured by compliance with:  
EN 60079-0:2009 General requirements  
EN 60079-1:2007 Druckfeste Kapselung „d“  
EN 60079-7:2007 Erhöhte Sicherheit „e“  
EN 60079-11:2007 Intrinsic safety „i“  
EN 60079-18:2009 Encapsulation „m“  
EN 60079-31:2009 Schutz durch Gehäuse „t“
- (10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the appendix to this certificate.
- (11) This supplement to the EC-Type Examination Certificate relates only to the design, examination and tests of the specified equipment in accordance to Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.
- (12) The marking of the equipment shall include the following:  
**II 2G Ex de IIC T4 Gb** Type without option; CG-S; ZB; DCA  
 **II 2G Ex de mb ib IIC T4 Gb** Type NIB  
**II 2D Ex tb IIIC T80 °C Db IP66**

DEKRA EXAM GmbH  
Bochum, dated 29. August 2012

Signed: Simanski

Certification body

Signed: Hauke

Special services unit



(13) Appendix to

(14) **3. Supplement to the EC-Type Examination Certificate**  
**BVS 09 ATEX E 034**

(15) 15.1 Subject and type

Fluorescent lighting fixture type eLL\*<sup>1)</sup> \*\*<sup>2)</sup> \*\*\*<sup>3)</sup> / \*\*<sup>4)</sup> \*<sup>5)</sup>

- 1) K : plastic enclosure  
M : pole mounted light with plastic enclosure  
S : stainless steel enclosure
- 2) 08 : type coding of stainless steel enclosure  
92 : type coding of plastic enclosure or pole mounting
- 3) 0 : bi-pin lamp cap type G13  
3 : one-pin lamp cap type FA6
- 4) 18/18 : 2x 18W  
36 : 1x 36W  
36/36 : 2x 36W  
58 : 1x 58W  
58/58 : 2x 58W
- 5) None : Standard  
ZB : suitable for emergency power supply (central battery)  
CG-S : Monitoring module  
NIB : intelligent single battery system  
DCA : DC - Disconnection

## 15.2 Description

The fluorescent lighting fixture type eLL\* \*\* \*\*\*/\*\* \* is an explosion-protected electrical apparatus that accommodates single or twin fluorescent luminaires with either lamp cap FA6 (one-pin) or lamp cap G13 (bi-pin).

Only separately certified EVGs, either one single, one double or two single, are used as electronic ballast, such as: EVG 05... (PTB 05 ATEX 2018 U), EVG 09... (BVS 09 ATEX E 054 U), VE/EVG 05 (BVS 09 ATEX E 043 U) or VE 97... (BVS 09 ATEX E 043 U).

The luminaires may be replaced inside the potentially explosive atmosphere if the fluorescent lighting fixture is equipped with a separately certified light switch (cf. PTB 00 ATEX 1105 U or PTB 98 ATEX 1033 U) which disconnects the light at all poles or if the voltage of the lighting fixture is set to zero before changing the luminaire. The variant without a light switch contains a relevant warning on the outside of the enclosure.

The lighting fixtures that are equipped with a luminaire size T12 (38 mm diameter) are exclusively used with mechanical protection.

The enclosure of the fixture consists of either glass-mat reinforced polyester or of stainless steel; the light-permitting diffuser is made of polycarbonate.

The lighting fixture type eLL\* \*\* \*\*\*/\*\* ZB is intended to be connected to a central battery system or emergency power supply. If the light operates on twin luminaires, each luminaire is supplied by a separate circuit via its own electronic ballast.

The lighting fixture type eLL\* \*\* \*\*\*/\*\* CG-S is equipped with a separately certified CG-S module (PTB 04 ATEX 2110 U), which can be connected to the central battery system (ZBS) of CEAG.

The lighting fixture type eLL\* \*\* \*\*\*/\*\* NIB is provided with an emergency light device which consists of one or two separately certified EVGs (EVG 05... or EVG 09...) in conjunction with the supply unit VE 97..., and/or the power supply / emergency light unit VE/EVG 05..., as well as a battery box type eBK02 or eBS09 (BVS 09 ATEX E 044 X) with an inserted battery of type 2710-3 (BVS 09 ATEX E 042 U).



The reason of the supplement is the updating to the standards EN 60079-0:2009 and EN 60079-31:2009, also the integration of the preceding revision reports into the test report:

- 1) The optional uses of a reducer from M25 to M20 thread incl. O-Ring.
- 2) The luminaires 18 W and 16 W can be manufactured with a glued foil (LEE-Filter 768, EGG YOLK Yellow) at the inside of protective hull.
- 3) The luminaire can be manufactured with a ferrite core between the electronic ballast e.g. supply unit and the terminal block to fulfil the EMV requirements.
- 4) The material of the locking rod has been changed into Durethan BKV 30 H3.0.

### 15.3 Parameters

#### 15.3.1 Electrical data

One-pin lamp cap type FA6

| Type of luminaire  | Type of electronic ballast                         | Nominal voltage                  | Frequency   |
|--------------------|----------------------------------------------------|----------------------------------|-------------|
| eLL* ** 318/18     | 1x EVG 09 218                                      | 110V – 254V AC<br>110V – 250V DC | 50Hz – 60Hz |
| eLL* ** 336        | 1x EVG 09 136                                      | 110V – 254V AC<br>110V – 250V DC | 50Hz – 60Hz |
| eLL* ** 336/36     | 1x EVG 09 236 bzw. – resp.<br>2x EVG 09 136        | 110V – 254V AC<br>110V – 250V DC | 50Hz – 60Hz |
| eLL* ** 358        | 1x EVG 09 158                                      | 220V – 254V AC<br>195V – 250V DC | 50Hz – 60Hz |
| eLL* ** 358/58     | 1x EVG 09 258 bzw. – resp.<br>2x EVG 09 158        | 220V – 254V AC<br>195V – 250V DC | 50Hz – 60Hz |
| eLL* ** 336/36 ZB  | 2x EVG 09 136                                      | 110V – 254V AC<br>110V – 250V DC | 50Hz – 60Hz |
| eLL* ** 358/58 ZB  | 2x EVG 09 158                                      | 220V – 254V AC<br>195V – 250V DC | 50Hz – 60Hz |
| eLL* ** 318/18 NIB | 1x VE/EVG 05 218 bzw. –<br>resp. 2x VE/EVG 05218-1 | 220V – 254V AC<br>110V – 127V AC | 50Hz – 60Hz |
| eLL* ** 336 NIB    | 1x VE 97 236 +<br>1x EVG 09 136                    | 220V – 254V AC<br>110V – 127V AC | 50Hz – 60Hz |
| eLL* ** 336/36 NIB | 1x VE 97 236 +<br>1x EVG 09 236                    | 220V – 254V AC<br>110V – 127V AC | 50Hz – 60Hz |



# Bi-pin lamp cap type G13

| Type of luminaire   | Type of electronic ballast                         | Nominal voltage                  | Frequency   |
|---------------------|----------------------------------------------------|----------------------------------|-------------|
| eLL* ** 018/18      | 1x EVG 09 218                                      | 110V – 254V AC<br>110V – 250V DC | 50Hz – 60Hz |
| eLL* ** 036         | 1x EVG 09 136                                      | 110V – 254V AC<br>110V – 250V DC | 50Hz – 60Hz |
| eLL* ** 036/36      | 1x EVG 09 236 bzw. - resp.<br>2x EVG 09 136        | 110V – 254V AC<br>110V – 250V DC | 50Hz – 60Hz |
| eLL* ** 058         | 1x EVG 09 158                                      | 220V – 254V AC<br>195V – 250V DC | 50Hz – 60Hz |
| eLL* ** 058/58      | 1x EVG 09 258 bzw. - resp.<br>2x EVG 09 158        | 220V – 254V AC<br>195V – 250V DC | 50Hz – 60Hz |
| eLL* ** 036/36 ZB   | 2x EVG 09 136                                      | 110V – 254V AC<br>110V – 250V DC | 50Hz – 60Hz |
| eLL* ** 058/58 ZB   | 2x EVG 09 158                                      | 220V – 254V AC<br>195V – 250V DC | 50Hz – 60Hz |
| eLL* ** 018/18 NIB  | 1x VE/EVG 05 218 bzw. -<br>resp. 1x VE/EVG 05218-1 | 220V – 254V AC<br>110V – 127V AC | 50Hz – 60Hz |
| eLL* ** 036 NIB     | 1x VE 97 236 +<br>1x EVG 09 136                    | 220V – 254V AC<br>110V – 127V AC | 50Hz – 60Hz |
| eLL* ** 036/36 NIB  | 1x VE 97 236 +<br>1x EVG 09 236                    | 220V – 254V AC<br>110V – 127V AC | 50Hz – 60Hz |
| eLL* ** 018/18 CG-S | 1x EVG 09 218<br>+CG-S Modul                       | 220V – 254V AC<br>195V – 250V DC | 50Hz – 60Hz |
| eLL* ** 036/36 CG-S | 1x EVG 09 236<br>+CG-S Modul                       | 220V – 254V AC<br>195V – 250V DC | 50Hz – 60Hz |
| eLL* ** 058/58 CG-S | 1x EVG 09 258<br>+CG-S Modul                       | 220V – 254V AC<br>195V – 250V DC | 50Hz – 60Hz |
| eLL* ** 018/18 DCA  | 1x EVG 09218 DCA Version                           | 110V – 254V AC<br>195V – 250V DC | 50Hz – 60Hz |
| eLL* ** 036/36 DCA  | 1x EVG 09236 DCA Version                           | 110V – 254V AC<br>195V – 250V DC | 50Hz – 60Hz |
| eLL* ** 058/58 DCA  | 1x EVG 09258 DCA Version                           | 110V – 254V AC<br>195V – 250V DC | 50Hz – 60Hz |



15.3.2 Thermal data

Type eLL\* \*\* \*\*\*/\*\*

Ambient temperature range if  $U < 220 \text{ V}$   $-25 \text{ °C} \leq T_a \leq +50 \text{ °C}$

Ambient temperature range if  $U \geq 220 \text{ V}$   $-25 \text{ °C} \leq T_a \leq +55 \text{ °C}$

Type eLL\* \*\* \*\*\*/\*\* NIB

Ambient temperature range  $-25 \text{ °C} \leq T_a \leq +50 \text{ °C}$

Type eLL\* \*\* 058/58

Ambient temperature range  $-25 \text{ °C} \leq T_a \leq +40 \text{ °C}$

(16) Test and assessment report

BVS PP 09.2044 EG as of 29.08.2012

(17) Special conditions for safe use

None

We confirm the correctness of the translation from the German original.  
In the case of arbitration only the German wording shall be valid and binding.

DEKRA EXAM GmbH  
44809 Bochum, 29. August 2012  
BVS-YII/Sp A 20120513



Certification body



Special services unit

**Wir / We / Nous****Cooper Crouse-Hinds GmbH**  
**Neuer Weg-Nord 49**  
**D-69412 Eberbach**

erklären in alleiniger Verantwortung, dass das Produkt  
*hereby declare in our sole responsibility, that the product*  
*déclarons de notre seule responsabilité, que le produit*

**Leuchte mit Leuchtstofflampen**  
**Luminaire with fluorescent lamps**  
**Luminaire avec lampes fluorescentes**

 **II 2 G /  II 2 D****eLL\* \*\* \*\*\*/\*\* \***

den folgenden EU-Richtlinien, den entsprechenden harmonisierten Normen, und weiteren normativen Dokumenten entspricht.  
*complies with the following EU directives, their corresponding harmonised standards, and other normative documents.*  
*correspond aux directives européennes suivantes, à leurs normes harmonisées, et aux autres documents normatifs suivants.*

Bestimmungen der Richtlinie  
*Terms of the directive*  
*Prescription de la directive*

Titel und / oder Nr. sowie Ausgabedatum der Norm.  
*Title and / or no. and date of issue of the standard.*  
*Titre et / ou no. ainsi que date d'émission des normes.*

94/9/EG: Geräte und Schutzsysteme zur bestimmungs-  
gemäßen Verwendung in explosionsgefährdeten  
Bereichen.

94/9/EC: Equipment and protective systems intended for  
use in potentially explosive atmospheres.

94/9/CE: Appareils et systèmes de protection destinés à  
être utilisés en atmosphères explosibles.

EN 60 079-0: 2009  
EN 60 079-1: 2007  
EN 60 079-7: 2007  
EN 60 079-11: 2007  
EN 60 079-18: 2009  
EN 60 079-31: 2009

EN 60 598-1: 2008 + A11: 2009  
EN 60 598-2-22: 1999 + A1 : 2003 + A2 : 2008  
EN 60 529: 1991 + A1: 2000

2004/108 EG: Elektromagnetische Verträglichkeit  
2004/108 EC: *Electromagnetic compatibility*  
2004/108 CE: *Compatibilité électromagnétique*

EN 61 547: 2009  
EN 55 015: 2006 + A1: 2007 + A2: 2009  
EN 61 000-3-2: 2006 + A1: 2009 + A2: 2009  
EN 61 000-6-2: 2005  
EN 61 000-6-3: 2007 + A1: 2011

2000/55/EG Energieeffizienzanforderungen an Vorschaltgeräte  
für Leuchtstofflampen

2000/55/EC Energy efficiency requirements for ballasts for  
ballasts for fluorescent lighting

2000/55/CE *établissant des exigences de rendement*  
*énergétique applicables aux ballasts pour*  
*l'éclairage fluorescent*

2000 / 55 / EC Annex 1 Category 1  
2 x 18 W / 16 W Class A 3  
1 x 36 W / 32 W Class A 2  
2 x 36 W / 32 W Class A 2  
1 x 58 W / 50 W Class A 3  
2 x 58 W / 50 W Class A 2

17.09.2012

Datum  
*date*  
*date*

Die Original-Konformitätserklärung ist dem Produkt beigelegt !  
The original declaration of conformity is supplied in the packing with the product !  
La déclaration originale de conformité sera fournie avec le produit !

<sup>(1)</sup> Benannte Stelle (EG-Baumusterprüfbescheinigung)  
*Notified body of the certification*  
*Organe notifié et compétent*

DEKRA EXAM GmbH (0158)  
Dinnendahlstraße 9  
D-44809 Bochum

Benannte Stelle (Qualitätssicherung Produktion)  
*Notified body to quality evaluation*  
*Organe d'attestation de conformité*

DEKRA EXAM GmbH (0158)  
Dinnendahlstraße 9  
D-44809 Bochum

Für den sicheren Betrieb des Betriebsmittels sind die Angaben der zugehörigen Betriebsanleitung zu beachten.  
*For the safe use of this apparatus, the information given in the accompanying operating instructions must be followed.*  
*Afin d'assurer le bon fonctionnement de nos appareils, prière de respecter les directives du mode d'emploi correspondant à ceux-ci.*





## (1) EC-TYPE-EXAMINATION CERTIFICATE (Translation)

(2) Equipment and Protective Systems Intended for Use in  
Potentially Explosive Atmospheres - **Directive 94/9/EC**

(3) EC-type-examination Certificate Number:

**PTB 00 ATEX 3121**



(4) Equipment: Trompet- shaped cable glands of types GHG 960 19..R....

(5) Manufacturer: CEAG Sicherheitstechnik GmbH

(6) Address: Neuer Weg Nord 49, D-69412 Eberbach

(7) This equipment and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

(8) The Physikalisch-Technische Bundesanstalt, notified body No. 0102 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Annex II to the Directive.

The examination and test results are recorded in the confidential report PTB Ex 00-30060.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:  
EN 50 014:1997 EN 50 019:1994

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

(11) This EC-type-examination Certificate relates only to the design and construction of the specified equipment in accordance with Directive 94/9/EC. Further requirements of this Directive apply to the manufacture and supply of this equipment.

(12) The marking of the equipment shall include the following:

II 2 G EEx e II

Zertifizierungsstelle Explosionsschutz

Braunschweig, July 21, 2000

By order:

Dr.-Ing. U. Ege  
Regierungssekretär

sheet 1/3

## SCHEDULE

(13)

(14) **EC-TYPE-EXAMINATION CERTIFICATE PTB 00 ATEX 3121**

(15) Description of equipment

The cable entry of types GHG 960 1949 R.... and GHG 960 1950 R.... made of polyamide serves to introduce non-permanently laid cables into electrical equipment of the type of protection increased safety "e". The cable entry consists of an intermediate gland, a trumpet-shaped gland, a strain relief device with two screws and sealing ring. An accessory part is a closing device for M-type glands.

### Technical data

|              |                                            |            |
|--------------|--------------------------------------------|------------|
| Nominal size | to be used for cable and conduit diameters |            |
| M 20 x 1,5   | from 8,0 mm                                | to 13,0 mm |
| M 25 x 1,5   | from 11,0 mm                               | to 16,0 mm |
| M 32 x 1,5   | from 15,0 mm                               | to 20,0 mm |
| M 40 x 1,5   | from 19,0 mm                               | to 27,0 mm |
| M 50 x 1,5   | from 28,0 mm                               | to 34,0 mm |
| M 63 x 1,5   | from 38,0 mm                               | to 46,0 mm |

Range of temperature of use, normal when sealing rings made of nitrile rubber NBR are used:

-40 °C to +85 °C

Range of temperature of use, extended when sealing rings made of Evoprene Super are used:

-50 °C to +80 °C

Suitable for equipment of equipment group II, with a degree of mechanical hazard:

high

Minimum wall thicknesses when fitted into equipment:

3,5 mm (plastic material); 1,0 mm (metal)

Protection against contact, foreign matter and water:

at least IP 54 acc. to EN 60 529:1991

### Note

The closing device for M-type glands for closing unused holes is to be fitted into the intermediate gland; then the trumpet-shaped gland is to be tightened to guarantee compliance with the minimum type of protection.

The blue-coloured clip is to be used for intrinsically safe circuits only.

The Ex cable entries are suitable for a range of the temperature of use extending from -40 °C to +85 °C. Suitability for the extended range, i.e. from -50 °C to +80 °C, is indicated by special marking.

The maximum thermal load of the cables introduced is to be taken into account.

(16) Test report PTB Ex 00-30060

(17) Special conditions for safe use

not applicable

Braunschweig und Berlin

## SCHEDULE TO EC-TYPE-EXAMINATION CERTIFICATE PTB 00 ATEX 3121

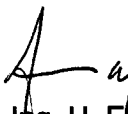
### (18) Essential health and safety requirements

The degree of protection - at least IP 54 according to EN 60529:1991 - will be guaranteed only by adequate selection of cable and conduit entries, of the sealings tested and by proper installation of the cable and conduit entries into the electrical apparatus.

Zertifizierungsstelle Explosionsschutz

Braunschweig, July 21, 2000

By order:

  
Dr.-Ing. U. Engel  
Regierungssekretär





## 1st SUPPLEMENT

according to Directive 94/9/EC Annex III.6

### to EC-TYPE-EXAMINATION CERTIFICATE PTB 00 ATEX 3121

(Translation)

Equipment: Trumpet-shaped cable gland, type GHG 960 19.. R....

Marking:  II 2 G EEx e II

Manufacturer: Cooper Crouse-Hinds GmbH  
formerly: CEAG Sicherheitstechnik GmbH

Address: Neuer Weg Nord 49,  
69412 Eberbach, Germany

#### Description of supplements and modifications

Standard applied in addition: EN 50281-1-1:1998

The nominal sizes M32x1.5, M40x1.5, M50x1.5 and M63x1.5 of the trumpet-shaped cable gland, type GHG 960 19.. R...., may also be employed in areas in which a potentially explosive atmosphere as a mixture of dust and air can occasionally form.

The marking for these nominal sizes thus changes to read:

 II 2 G/D EEx e II IP 66

The operating temperatures of these nominal sizes is expanded to - 55 °C .... + 85 °C, provided a suitable sealing ring is used.

Since the company name has changed, the trumpet-shaped cable gland, type GHG 960 19.. R...., is provided with the new name COOPER Crouse-Hinds GmbH.

#### Notes for manufacturing and operation

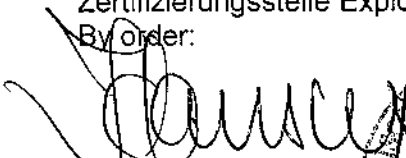
The notes for manufacturing and operation equally apply to this supplement.

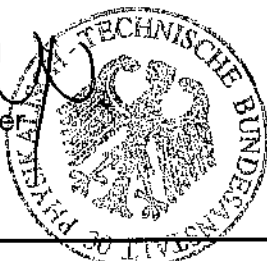
Test report: PTB Ex 04-14028

Zertifizierungsstelle Explosionsschutz

Braunschweig, February 9, 2004

By order:

  
Dr.-Ing. U. Klausmeyer  
Regierungsdirektor



Sheet 1/1

EC-type-examination Certificates without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt. In case of dispute, the German text shall prevail.

**2nd SUPPLEMENT**  
according to Directive 94/9/EC Annex III.6  
**to EC-TYPE-EXAMINATION CERTIFICATE PTB 00 ATEX 3121**  
**(Translation)**

Equipment: Trumpet-shaped cable gland, type GHG 960 19.. R....

Marking:  II 2 G EEx e II  II 2 D IP 66

Manufacturer: Cooper Crouse-Hinds GmbH (vormals CEAG Sicherheitstechnik GmbH)

Address: Neuer Weg Nord 49, 69412 Eberbach, Germany

Description of supplements and modifications

The nominal sizes M20 to M63 of the trumpet-shaped cable gland, type GHG 960 19.. R...., may also be employed in areas in which a potentially explosive atmosphere as a mixture of dust and air can occasionally form.

The marking for use in areas with inflammable dust changes to read:

 II 2 D IP 6X

The operating temperatures of all nominal sizes is expanded to - 55 °C .... + 85 °C, provided a suitable sealing ring is used.

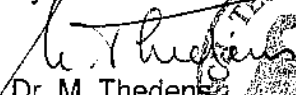
Applied standards

**EN 50281-1-1:1998**

Test report: PTB Ex 05-15121

Zertifizierungsstelle Explosionsschutz

By order:

  
Dr. M. Thedens

Braunschweig, April 28, 2005

Sheet 1/1

Physikalisch-Technische Bundesanstalt • Postfach 33 45 • 38023 Braunschweig

Cooper-Crouse Hinds GmbH  
z. Hd. Frau Frankhauser

Neuer Weg Nord 49  
69412 Eberbach

Ihr Zeichen:  
Ihre Nachricht vom: 29.11.2007  
Unser Zeichen:  
Unsere Nachricht vom:

Bearbeitet von: Dr. Monika Schumann  
Telefondurchwahl: +49 (0) 531-592-3515  
Telefaxdurchwahl: +49 (0) 531-592-3505  
E-Mail: Monika.Schumann@ptb.de

Datum: 14. Januar 2008

**Normengenerationsänderung nach EN 60079-0 ff, EN 6124-0 ff  
Trompetenverschraubung Typ / trumpet-shaped cable gland, type GHG 960 19.. R....,  
PTB 00 ATEX 3121**

Sehr geehrte Frau Frankhauser,  
es bestehen keine sicherheitstechnischen Bedenken,  
die Trompetenverschraubung Typ GHG 960 19.. R.... mit folgenden Kennzeichnungen zu versehen:

 II 2 G Ex e II

 II 2 D Ex tD A21 IP66

Wir bitten Sie, diese Änderungen bei zukünftigen Ergänzungen mit aufzunehmen.

Translation

there are no safety-related objections from PTB to mark  
the trumpet-shaped cable gland, type GHG 960 19.. R.... as follows

 II 2 G Ex e II

 II 2 D Ex tD A21 IP66

We would like to ask you to include this change into the next supplement.

Mit freundlichen Grüßen  
Im Auftrag

*Schumann*

Dr. Schumann  
Regierungsrätin



# Junction Box Certificates

# Assembly Instructions for: PL 6\*\* Series Junction Boxes

**HAWKE**  
International

Assembly Instructions  
AI 273 / Issue P - 12/09

**IMPORTANT:** This document should be read carefully before commencing installation

## Zones of Use of Terminal Box

CAT II 2G for use in Zone 1. Areas as defined in IEC/EN 60079-14.

CAT II 2D for use in Zone 21 or 22. Areas as defined in IEC/EN 61241-1-2.

## Service Temperature

PL 6\*\* -60°C to +75°C

## Minimum Installation Temperature: -5°C

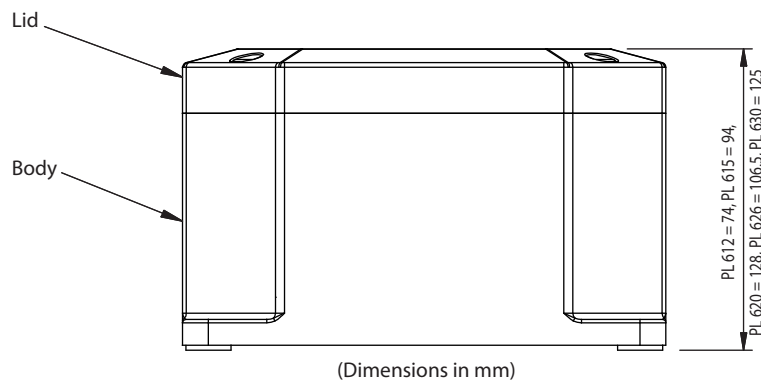
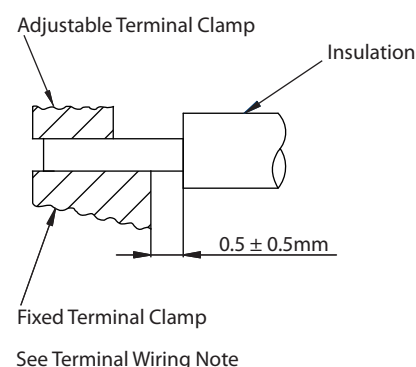
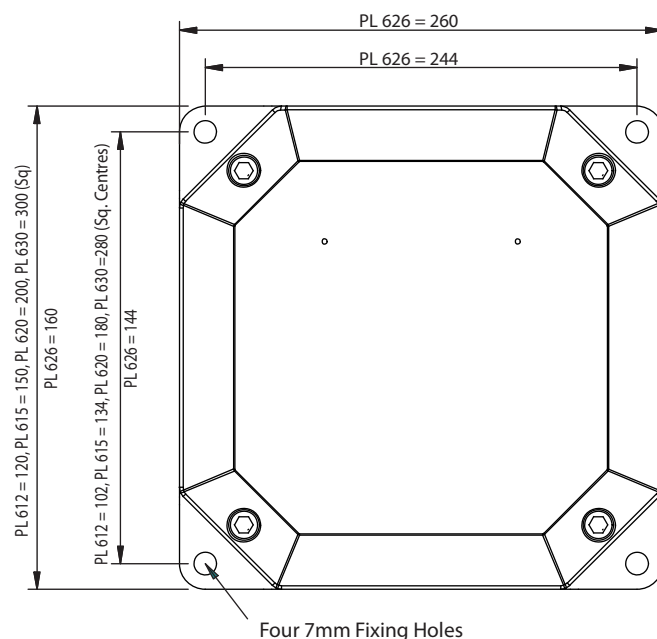
## Certification Details

Box Type: PL6\*\* Series Exe II/ExtD

Baseefa No: 01ATEX2107X Ⓢ II 2 GD T\*\* Exe II T\* Tamb \*\*\* IP66/67 Ⓒ

Baseefa No: 06ATEX0117X Ⓢ II 2 GD T\*\* T\* Tamb \*\*\* IP66/67 Ⓒ

IEC Ex No: BAS06.0028X



W = Maximum Dissipated Wattage

N = No. of Terminals Fitted

F = Combined Terminal Resistance

I = Maximum Current

$$W = N \times F \times I^2$$

$$N = W / F \times I^2$$

$$I = \text{Sqrt}(W / N \times F)$$

**Note:** Combined Terminal Resistance = Resistance of Maximum Conductor Length (see BS 6360 and table below) + Terminal Resistance

| Box Type | Maximum Power Dissipation (Watts) |      |                |    |      |                |    |      |                |    |      |                |    |      |                |    | Max.<br>Cable Length<br>Per Terminal<br>(M) |       |                |
|----------|-----------------------------------|------|----------------|----|------|----------------|----|------|----------------|----|------|----------------|----|------|----------------|----|---------------------------------------------|-------|----------------|
|          | T*                                | T**  | T***           | T* | T**  | T***           | T* | T**  | T***           | T* | T**  | T***           | T* | T**  | T***           | T* |                                             | T**   | T***           |
|          | T6                                | 80°C | -60°C<br>+40°C | T6 | 80°C | -60°C<br>+55°C | T6 | 80°C | -60°C<br>+65°C | T5 | 80°C | -60°C<br>+40°C | T5 | 80°C | -60°C<br>+55°C | T5 |                                             | 80°C  | -60°C<br>+65°C |
| PL 612   | 4.1                               |      | 2.5            |    |      | 1.5            |    |      | 5.6            |    |      | 4.1            |    |      | 3.0            |    |                                             | 0.127 |                |
| PL 615   | 6.4                               |      | 4.0            |    |      | 2.4            |    |      | 8.8            |    |      | 6.4            |    |      | 4.8            |    |                                             | 0.175 |                |
| PL 620   | 11.4                              |      | 7.1            |    |      | 4.2            |    |      | 15.6           |    |      | 11.4           |    |      | 8.5            |    |                                             | 0.240 |                |
| PL 626   | 11.4                              |      | 7.1            |    |      | 4.2            |    |      | 15.6           |    |      | 11.4           |    |      | 8.5            |    |                                             | 0.275 |                |
| PL 630   | 20.8                              |      | 13.0           |    |      | 7.8            |    |      | 28.6           |    |      | 20.8           |    |      | 15.6           |    |                                             | 0.365 |                |

**Connection Solutions**

Hawke International is a division of Hubbell Ltd.  
Registered No. 669157 in England. Registered Office:  
Mitre House, 160 Aldersgate Street, London EC1A 4DD.  
A member of the Hubbell Group of Companies

Hawke International  
UK Office  
Oxford Street West,  
Ashton-Under-Lyne,  
Lancashire  
OL7 0NA, UK

AI 273 - Issue P / Page 1 of 3  
Sales: +44 (0) 161 830 6698  
Technical: +44 (0) 161 830 6697  
Fax: +44 (0) 161 830 6648  
E-mail: sales@ehawke.com

[www.ehawke.com](http://www.ehawke.com)

#### TO OPEN THE LID:

1. Disconnect power (isolate all circuits).
2. Untighten the lid securing screws.
3. Carefully remove the lid ensuring the gasket is not displaced or damaged.

#### TO CLOSE THE LID:

1. Check that the gasket is correctly located in the groove in the underside of the lid and undamaged. Ensure that the correct lid is refitted.
2. Locate and tighten all the lid securing screws into the box body.

#### ENCLOSURE INSTALLATION (EI)

- a) The IP rating of the enclosure must be maintained for the area of use (e.g. IP6\* for Zone 21 dust environment) by the use of correct arrangement of cable/gland/sealing arrangements and in accordance with the installation codes as detailed in IEC/EN 60079-14 - IEC/EN 61241 and these installation instructions.
- b) Where other certified components are part of the assembly, the user must take account of any limitations listed on relevant certificates.
- c) If an optional Breather/Drain as listed on the enclosure certificate is fitted the enclosure must be sited such that the Breather/Drain is pointing vertically downwards from the bottom of the box, and the IP rating of the selected Breather/Drain shall match the IP rating of the enclosure.
- d) The enclosure may be ready supplied with cable entries. Where the customer drills cable entries they must be installed in accordance with the component certificate BAS06ATEX0116U or IEC Ex No: BAS06.0027U and enclosure limitations, these specify a maximum clearance on the entry thread of 0.7mm for plain holes and where adjacent cable entries are installed sufficient clearance must be maintained to allow for the fitting of sealing/retaining washers and the rotation of the cable gland hexagons, and leave a minimum of material between adjacent holes inline with the above certificate number(s).
- e) All unused entry apertures must be sealed using a stopping plug as listed on the enclosure certificate and also the IP rating of the junction box shall be maintained for the zone of use.
- f) The apparatus must not be modified in anyway without reference to Hawke, as this will invalidate the certification, except for EI d) and e) and TW j) and k).

#### TERMINAL WIRING (TW)

- a) All wiring must be carried out in accordance with the relevant code of practice and/or instructions e.g. IEC/EN 60079-14 and IEC/EN 61241.
- b) The voltage and current and maximum dissipated power shown on the label must not be exceeded.
- c) When used as a general purpose junction box or marshalling box the circuits carrying currents  $\geq 1\text{A}$  shall be individually protected against over current such that the protective device operates effectively at no more than 1.45 times the current carrying capacity of the smallest conductor used in that circuit.
- d) Where a major portion of the terminals are carrying maximum rated current the temperature at the branching point of the conductors may exceed 70°C. Under these circumstances the installer must ensure that the limiting temperature for the cable insulation used is acceptable e.g. 85°C (T6) or 100°C (T5).
- e) All leads must be insulated for the appropriate voltage.
- f) Not more than one single or multiple stranded lead shall be connected into either side of the terminals, unless the relevant component certificate allows more, or unless the multiple conductors have been previously joined in a suitable manner (for example with an insulated crimped boot lace ferrule, mounted in a vertical position) such that they form a single cohesive item for insertion into the terminal way.
- g) A parallel shaft screwdriver of the correct size should be used.
- h) Only those terminals shown on Drg. D9160 IECEx terminal schedule may be incorporated in the box. The installer must ensure that the conditions of use for the terminals outlined are complied with.
- i) All terminal screws used and unused shall be fully tightened down.
- j) The installer shall ensure creepage and clearance distances are not reduced, especially between intrinsically safe (is) and non-is circuits (e.g. 50mm clearance).
- k) The use of any cross connection devices between adjacent terminal ways shall be in accordance with the requirements of the relevant component certificate listed on Drg. D9160.
- l) Use of the terminal box at ambient temperatures below -20°C is dependant upon the minimum service temperature of the terminals.
- m) When connecting a terminal with a conductor that is below the maximum cross section area shown for the terminal, then the maximum amps / pole must be reduced in line with the maximum amps indicated for a terminal equivalent to the conductor size being fitted e.g. for a terminal that can take a maximum conductor size of 10mm<sup>2</sup> at 40 Amps, but is fitted with a 4mm<sup>2</sup> conductor then the current shall be reduced to a maximum of 16 Amps, or the rating on the junction box lid label (whichever is the lowest).

#### EARTHING:

- a) The earth leads must be in accordance with IEC/EN 60079-0 : 2004.
- b) Junction boxes shall be earthed in accordance with the relevant code of practice e.g. IEC/EN 60079-14 and IEC/EN 61241.
  - i) The PL 6\*\* series boxes are supplied fitted with an internal earth terminal.
  - ii) The PL 6\*\* series boxes may be supplied fitted with or without an internal earth continuity plate.

**Note :** *There is no integral connection from the internal earth continuity plate through to the external of the box.*



## SCHEDULE OF TERMINALS FITTED (T6 40C AND T5 55C)

| PL 612 Terminal Capacity Data |                                |      |            |                                   |      |                                                   |      |                                     |                                  |                                 |
|-------------------------------|--------------------------------|------|------------|-----------------------------------|------|---------------------------------------------------|------|-------------------------------------|----------------------------------|---------------------------------|
| Terminal Type                 | Conductor Size mm <sup>2</sup> |      | Max. Volts | Maximum Physical Terminal Content |      | Reduced Terminal Content at Maximum Terminal Amps |      | Combined Terminal Resistance (Ohms) | Insulation Stripping Length (mm) | Terminal Tightening Torque (Nm) |
|                               | Min                            | Max  |            | Term. Qty.                        | Amps | Term. Qty.                                        | Amps |                                     |                                  |                                 |
| WDU2.5N                       | 0.5                            | 2.5  | 420        | 12                                | 16   | 10                                                | 17   | 0.001301                            | 10                               | 0.4 - 0.6                       |
| WDU2.5                        | 0.5                            | 2.5  | 550        | 10                                | 17   | 10                                                | 17   | 0.001271                            | 10                               | 0.4 - 0.6                       |
| WDU4                          | 0.5                            | 4.0  | 690        | 10                                | 22   | 9                                                 | 22   | 0.000895                            | 10                               | 0.5 - 1.0                       |
| WDU6                          | 0.5                            | 6.0  | 550        | 9                                 | 29   | 6                                                 | 29   | 0.000671                            | 12                               | 0.8 - 1.6                       |
| WDU10                         | 1.5                            | 10.0 | 550        | 6                                 | 39   | 5                                                 | 40   | 0.000432                            | 12                               | 1.2 - 2.4                       |
| BK6                           | 1.0                            | 6.0  | 275        | 1                                 | 20   | N/A                                               | N/A  | 0.000936                            | 8                                | 0.5 - 0.7                       |
| MK6/6                         | 1.0                            | 6.0  | 440        | 1                                 | 26   | N/A                                               | N/A  | 0.000521                            | 9                                | 1.2 - 2.0                       |

| PL 615 Terminal Capacity Data |                                |      |            |                                   |      |                                                   |      |                                     |                                  |                                 |
|-------------------------------|--------------------------------|------|------------|-----------------------------------|------|---------------------------------------------------|------|-------------------------------------|----------------------------------|---------------------------------|
| Terminal Type                 | Conductor Size mm <sup>2</sup> |      | Max. Volts | Maximum Physical Terminal Content |      | Reduced Terminal Content at Maximum Terminal Amps |      | Combined Terminal Resistance (Ohms) | Insulation Stripping Length (mm) | Terminal Tightening Torque (Nm) |
|                               | Min                            | Max  |            | Term. Qty.                        | Amps | Term. Qty.                                        | Amps |                                     |                                  |                                 |
| WDU2.5N                       | 0.5                            | 2.5  | 420        | 14                                | 16   | 13                                                | 17   | 0.001657                            | 10                               | 0.4 - 0.6                       |
| WDU2.5                        | 0.5                            | 2.5  | 550        | 14                                | 17   | 13                                                | 17   | 0.001627                            | 10                               | 0.4 - 0.6                       |
| WDU4                          | 0.5                            | 4.0  | 690        | 12                                | 22   | 11                                                | 22   | 0.001117                            | 10                               | 0.5 - 1.0                       |
| WDU6                          | 0.5                            | 6.0  | 550        | 9                                 | 29   | 9                                                 | 29   | 0.000819                            | 12                               | 0.8 - 1.6                       |
| WDU10                         | 1.5                            | 10.0 | 550        | 7                                 | 40   | 7                                                 | 40   | 0.000520                            | 12                               | 1.2 - 2.4                       |
| WDU16                         | 1.5                            | 16.0 | 690        | 6                                 | 53   | 6                                                 | 53   | 0.000351                            | 16                               | 2.0 - 4.0                       |

| PL 620 Terminal Capacity Data |                                |      |            |                                   |      |                                                   |      |                                     |                                  |                                 |
|-------------------------------|--------------------------------|------|------------|-----------------------------------|------|---------------------------------------------------|------|-------------------------------------|----------------------------------|---------------------------------|
| Terminal Type                 | Conductor Size mm <sup>2</sup> |      | Max. Volts | Maximum Physical Terminal Content |      | Reduced Terminal Content at Maximum Terminal Amps |      | Combined Terminal Resistance (Ohms) | Insulation Stripping Length (mm) | Terminal Tightening Torque (Nm) |
|                               | Min                            | Max  |            | Term. Qty.                        | Amps | Term. Qty.                                        | Amps |                                     |                                  |                                 |
| WDU2.5N                       | 0.5                            | 2.5  | 420        | 24                                | 16   | 18                                                | 17   | 0.002138                            | 10                               | 0.4 - 0.6                       |
| WDU2.5                        | 0.5                            | 2.5  | 550        | 24                                | 16   | 18                                                | 17   | 0.002108                            | 10                               | 0.4 - 0.6                       |
| WDU4                          | 0.5                            | 4.0  | 690        | 20                                | 21   | 16                                                | 22   | 0.001416                            | 10                               | 0.5 - 1.0                       |
| WDU6                          | 0.5                            | 6.0  | 550        | 15                                | 29   | 12                                                | 29   | 0.001019                            | 12                               | 0.8 - 1.6                       |
| WDU10                         | 1.5                            | 10.0 | 550        | 12                                | 40   | 10                                                | 40   | 0.000639                            | 12                               | 1.2 - 2.4                       |
| WDU16                         | 1.5                            | 16.0 | 690        | 9                                 | 53   | 9                                                 | 53   | 0.000426                            | 16                               | 2.0 - 4.0                       |
| WDU35                         | 2.5                            | 35.0 | 690        | 6                                 | 87   | 6                                                 | 87   | 0.000226                            | 16                               | 4.0 - 5.0                       |
| WDU70N                        | 10.0                           | 70.0 | 690        | 4                                 | 134  | 4                                                 | 134  | 0.000124                            | 22                               | 8.0 - 12.0                      |

| PL 626 Terminal Capacity Data |                                |      |            |                                   |      |                                                   |      |                                     |                                  |                                 |
|-------------------------------|--------------------------------|------|------------|-----------------------------------|------|---------------------------------------------------|------|-------------------------------------|----------------------------------|---------------------------------|
| Terminal Type                 | Conductor Size mm <sup>2</sup> |      | Max. Volts | Maximum Physical Terminal Content |      | Reduced Terminal Content at Maximum Terminal Amps |      | Combined Terminal Resistance (Ohms) | Insulation Stripping Length (mm) | Terminal Tightening Torque (Nm) |
|                               | Min                            | Max  |            | Term. Qty.                        | Amps | Term. Qty.                                        | Amps |                                     |                                  |                                 |
| WDU2.5N                       | 0.5                            | 2.5  | 420        | 38                                | 11   | 15                                                | 17   | 0.002398                            | 10                               | 0.4 - 0.6                       |
| WDU2.5                        | 0.5                            | 2.5  | 550        | 38                                | 11   | 15                                                | 17   | 0.002368                            | 10                               | 0.4 - 0.6                       |
| WDU4                          | 0.5                            | 4.0  | 690        | 32                                | 15   | 14                                                | 22   | 0.001578                            | 10                               | 0.5 - 1.0                       |
| WDU6                          | 0.5                            | 6.0  | 550        | 24                                | 20   | 11                                                | 29   | 0.001127                            | 12                               | 0.8 - 1.6                       |
| WDU10                         | 1.5                            | 10.0 | 550        | 19                                | 28   | 9                                                 | 40   | 0.000703                            | 12                               | 1.2 - 2.4                       |
| WDU16                         | 1.5                            | 16.0 | 690        | 16                                | 39   | 8                                                 | 53   | 0.000466                            | 16                               | 2.0 - 4.0                       |
| WDU35                         | 2.5                            | 35.0 | 690        | 12                                | 62   | 6                                                 | 87   | 0.000244                            | 16                               | 4.0 - 5.0                       |

If glands are installed in Faces B and D, maximum terminal quantities may be reduced.

| PL 630 Terminal Capacity Data |                                |      |            |                                   |      |                                                   |      |                                     |                                  |                                 |
|-------------------------------|--------------------------------|------|------------|-----------------------------------|------|---------------------------------------------------|------|-------------------------------------|----------------------------------|---------------------------------|
| Terminal Type                 | Conductor Size mm <sup>2</sup> |      | Max. Volts | Maximum Physical Terminal Content |      | Reduced Terminal Content at Maximum Terminal Amps |      | Combined Terminal Resistance (Ohms) | Insulation Stripping Length (mm) | Terminal Tightening Torque (Nm) |
|                               | Min                            | Max  |            | Term. Qty.                        | Amps | Term. Qty.                                        | Amps |                                     |                                  |                                 |
| WDU2.5N                       | 0.5                            | 2.5  | 420        | 76                                | 9    | 23                                                | 17   | 0.003065                            | 10                               | 0.4 - 0.6                       |
| WDU2.5                        | 0.5                            | 2.5  | 550        | 76                                | 9    | 23                                                | 17   | 0.003035                            | 10                               | 0.4 - 0.6                       |
| WDU4                          | 0.5                            | 4.0  | 690        | 64                                | 12   | 21                                                | 22   | 0.001993                            | 10                               | 0.5 - 1.0                       |
| WDU6                          | 0.5                            | 6.0  | 550        | 48                                | 17   | 17                                                | 29   | 0.001404                            | 12                               | 0.8 - 1.6                       |
| WDU10                         | 1.5                            | 10.0 | 550        | 36                                | 25   | 15                                                | 40   | 0.000868                            | 12                               | 1.2 - 2.4                       |
| WDU16                         | 1.5                            | 16.0 | 690        | 30                                | 34   | 12                                                | 53   | 0.000570                            | 16                               | 2.0 - 4.0                       |
| WDU35                         | 2.5                            | 35.0 | 690        | 22                                | 55   | 9                                                 | 87   | 0.000291                            | 18                               | 4.0 - 5.0                       |
| WDU70N                        | 10.0                           | 70.0 | 690        | 11                                | 108  | 7                                                 | 134  | 0.000158                            | 22                               | 8.0 - 12.0                      |

**Note:** Terminals listed are only suitable for a minimum operating temperature of -50°C.



# 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 06.0027U issue No.:10

Status: **Current**

Date of Issue: **2014-07-22** Page 1 of 4

Applicant: **Hawke International**  
A Division of Hubbell Ltd.  
A member of the Hubbell Group of Companies  
Oxford Street West  
Ashton-under-Lyne, Lancashire  
OL7 0NA  
**United Kingdom**

### Certificate history:

Issue No. 10 (2014-7-22)  
Issue No. 9 (2012-4-30)  
Issue No. 8 (2012-4-11)  
Issue No. 7 (2011-8-3)  
Issue No. 6 (2011-3-25)  
Issue No. 5 (2010-11-25)  
Issue No. 4 (2010-7-7)  
Issue No. 3 (2009-12-18)  
Issue No. 2 (2009-5-14)  
Issue No. 1 (2007-3-20)

Electrical Apparatus: **ZPL6\*\* Range of Enclosures**  
Optional accessory:

Type of Protection: **Ex e II**

Marking: **Ex e IIC Gb**  
**Ex tb IIIC Db IP66 and IP67**

Approved for issue on behalf of the IECEx Certification Body: R S Sinclair

Position: General Manager

Signature:  
(for printed version)

Date:

  
22-7-14

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**





# IECEx Certificate of Conformity

Certificate No.: IECEx BAS 06.0027U

Date of Issue: 2014-07-22

Issue No.: 10

Page 2 of 4

Manufacturer: **Hawke International**  
A Division of Hubbell Ltd.  
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 electrical 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><br>Edition: 6.0  | Explosive atmospheres - Part 0: General requirements                                 |
| <b>IEC 60079-31 : 2008</b><br>Edition: 1   | Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure 't' |
| <b>IEC 60079-7 : 2006-07</b><br>Edition: 4 | Explosive atmospheres - Part 7: Equipment protection by increased safety "e"         |

*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:

|                       |                       |                       |
|-----------------------|-----------------------|-----------------------|
| GB/BAS/ExTR06.0032/00 | GB/BAS/ExTR07.0030/00 | GB/BAS/ExTR09.0075/00 |
| GB/BAS/ExTR09.0258/00 | GB/BAS/ExTR10.0155/00 | GB/BAS/ExTR10.0270/00 |
| GB/BAS/ExTR11.0044/00 | GB/BAS/ExTR11.0186/00 | GB/BAS/ExTR12.0054/00 |
| GB/BAS/ExTR12.0113/00 | GB/BAS/ExTR12.0307/00 | GB/BAS/ExTR14.0209/00 |

##### Quality Assessment Report:

GB/BAS/QAR06.0061/04





# IECEx Certificate of Conformity

Certificate No.: IECEx BAS 06.0027U

Date of Issue: 2014-07-22

Issue No.: 10

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## Schedule

### EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The ZPL6\*\* Range of Enclosures are square or rectangular enclosures moulded from glass reinforced polyester. The enclosures are available in the following sizes:

| Enclosure | length (mm) | width (mm) | height (mm) |
|-----------|-------------|------------|-------------|
| ZPL 612   | 120         | 120        | 74          |
| ZPL 615   | 150         | 150        | 94          |
| ZPL 620   | 200         | 200        | 127         |
| ZPL 630   | 300         | 300        | 127         |
| ZPL 626   | 260         | 160        | 106.5       |

The base of each enclosure has external mounting lugs at each corner and the removable cover is secured by 4 screws retained in the cover by nylon washers or a special moulding in the lid. These screw into moulded, clipped or glued inserts at the corners of the body.

Ingress protection of IP66 or IP67 is achieved by the use of a silicone O-ring located in a groove in the cover which is compressed on assembly of the cover and base by a moulded protruding lip on the base. For further details and optional accessories, see the Annexe.

### CONDITIONS OF CERTIFICATION: NO

#### SCHEDULE OF LIMITATIONS

1. If a breathing and draining device is required it shall be manufactured by Redapt in accordance with SIRA99ATEX3050U, and the enclosure ambient temperature range shall be limited to -50°C.
2. Any breathing and draining device must be installed in its correct orientation in the bottom face of the enclosure.
3. The enclosures shall not be exposed to temperatures outside the range -60°C to 75°C.
4. Unused entry holes must be fitted with one of the following stopping plugs:
  - Hawke Type 375 to Baseefa06ATEX0236U / IECEx BAS 06.0056U
  - Hawke Type 387 to Baseefa06ATEX0118U / IECEx BAS 06.0029U
  - Redapt Type PD-E-4 to SIRA00ATEX3091
  - Redapt Type PD-U to SIRA00ATEX1094
  - Raxton Types CK, CQ, CF and CB to SIRA00ATEX1073U
5. The enclosure is limited to the temperature range of the stopping plug fitted.
6. Unused entries may be fitted with alternative stopping plugs and or breather drains to those listed in the schedule. The user is responsible for ensuring that the protection concept, temperature class and relevant IP rating are maintained.
7. The bulkhead fitting shall have a maximum projection length from the enclosure wall of 60mm. The user is responsible for ensuring that the service temperature range and IP rating of the enclosure are not compromised by installation of the bulkhead fitting.





# IECEx Certificate of Conformity

Certificate No.: IECEx BAS 06.0027U

Date of Issue: 2014-07-22

Issue No.: 10

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

### Variation 10.1

To include the test report GB/BAS/ExTR12.0307/00 for the repeat Thermal Conditioning and Ingress Protection testing of two existing types of silicone o-ring.

### Variation 10.2

Minor drawing modifications to the ZPL626 lid

### Variation 10.3

Minor drawing modifications to the ZPL626 body

ExTR: GB/BAS/ExTR14.0209/00

File Reference: 13/0402

# Baseefa (2001) Ltd.

Rockhead Business Park  
Staden lane, Buxton  
Derbyshire  
SK17 9RZ  
United Kingdom



ANNEX to IECEx BAS 06.0027U

Issue No. 0

Date: 2006/08/11

The **ZPL6\*\* Range of Enclosures** are square or rectangular enclosures moulded from glass reinforced polyester. The enclosures are available in the following sizes:

| Enclosure | length (mm) | width (mm) | height (mm) |
|-----------|-------------|------------|-------------|
| ZPL 612   | 120         | 120        | 74          |
| ZPL 615   | 150         | 150        | 94          |
| ZPL 620   | 200         | 200        | 127         |
| ZPL 630   | 300         | 300        | 127         |
| ZPL 626   | 260         | 160        | 106.5       |

The enclosures comprise of two parts. The base with moulded external mounting lugs at each corner and the removable cover secured by 4 screws retained in the cover by nylon washers or a special moulding in the lid. The cover fixings screw into moulded inserts at the corners of the body. The inserts may alternatively be clipped or glued in position where applicable.

Ingress protection of at least IP66 and IP67 is achieved by the use of a silicone O-ring located in a groove in the cover which is compressed on assembly of the cover and base by a moulded protruding lip on the base. Controlled compression is achieved by suitable selection of the depth of cover groove and height of base lip.

Brass or stainless steel inserts are provided in the base for fixing internal components. Any of the sides of the enclosure, including the base and lid, may be drilled and tapped or drilled with clearance holes for cable entries. The maximum number, size and allowed location of these holes is defined on the relevant drawings listed below.

Provision is made for up to four extra optional blind holes on either the cover or the base, or both, for the purpose of fixing additional labels on all 5 enclosure sizes.

The marking details may be embossed into the lid in a recess of up to 1mm depth on the ZPL612, ZPL615, ZPL620 and ZPL630 enclosures.

The enclosures may be fitted with either a flat metallic mounting plate or an earth continuity plate which is a cruciform shape with four folded up stands with punchings for cable entry devices in the up stands. The earth continuity plate may also consist of metal up stands riveted or welded to a metal base plate or simply just the up stands on their own. Both the mounting plate and the earth continuity plate are suitably drilled and punched where appropriate for mounting to the enclosure base and for the mounting of enclosure components. Screws and washers are used to secure the plate to the base of the enclosure using the moulded-in inserts provided in the base.

The enclosure may additionally be fitted with an external/internal earth stud assembly covered by BASEEFA Certificate No. BAS01ATEX2111U.

The enclosures may be coated with an electromagnetic interference shielding material. The coating is either nickel or silver and may be applied internally, externally or both and may include a decorative black polyurethane finish. Both materials are held in a polyurethane resin binder. This coating is carried out by Hawke International.

When enclosures are externally EMC coated an internal/external earth stud assembly is always fitted.

The enclosures are normally black but may be produced in alternative colours by coating with an acrylic or epoxy (xylene solvent based) paint finish. The customer may paint the enclosure in accordance with procedures supplied by Hawke International.



1 **EC - TYPE EXAMINATION CERTIFICATE**

2 **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres**  
**Directive 94/9/EC**

3 EC - Type Examination Certificate Number: **Baseefa06ATEX0117X**

4 Equipment or Protective System: **PL6\*\* Range of Junction Boxes**

5 Manufacturer: **Hawke International**

6 Address: **Oxford Street West, Ashton-under-Lyne, Lancashire, OL7 0NA**

7 This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

8 Baseefa (2001) Ltd., Notified Body number 1180, in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential Report No. **GB/BAS/Ex/TR06.0033/00**

9 Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

**EN 60079-0:2004, EN60079-7:2003, EN 61241-0: 2004, EN 61241-1: 2004**

except in respect of those requirements listed at item 18 of the Schedule.

10 If the sign "X" is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.

11 This EC - TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified equipment or protective system. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.

12 The marking of the equipment or protective system shall include the following :

**(Ex) II 2GD Exe II Ex tD A21 T (see schedule) 80°C Tamb -60°C to (see schedule)**

This certificate may only be reproduced in its entirety, without any change, schedule included.

Baseefa Customer Reference No. **0500**

Project File No. **04/0901**

This certificate is granted subject to the general terms and conditions of Baseefa (2001) Ltd. It does not necessarily indicate that the equipment may be used in particular industries or circumstances.

**Baseefa**

Rockhead Business Park, Staden Lane,  
Buxton, Derbyshire SK17 9RZ  
Telephone +44 (0) 1298 766600 Fax +44 (0) 1298 766601  
e-mail [info@baseefa.com](mailto:info@baseefa.com) web site [www.baseefa.com](http://www.baseefa.com)  
Baseefa is a trading name of Baseefa (2001) Ltd  
Registered in England No. 4305578 at the above address

**R S SINCLAIR**

**DIRECTOR**  
On behalf of  
Baseefa (2001) Ltd.

Re-issued 06/07/10 - minor clarifications





13

## Schedule

14

Certificate Number Baseefa06ATEX00117X

### 15 Description of Equipment or Protective System

The PL6\*\* Range of Junction Boxes consist of the type ZPL6\* range of plastic empty enclosures covered by Baseefa06ATEX0116U Exe II. The junction boxes are fitted with a variety of different terminal arrangements. All the terminals are covered by their own component certificates and are coded Exe II. The terminals are listed on D9160 held on Baseefa General Technical File 0500. The actual terminals fitted to each junction box will be listed in the schedule of the instruction sheet supplied with the junction box.

The terminals must be used within their relevant temperature range, voltage and current limitations, and fitted in accordance with IEC 60079 with regard to creepage and clearance distances by Hawke International. Details on drawing C2542 describe partitioning arrangements which allow for the termination of intrinsically safe (i.s.) circuits and non i.s. circuits within the same junction box. When i.s. circuits are present an additional label is fitted to the outside of the junction box stating 'INTRINSICALLY SAFE CIRCUITS ENCLOSED'.

The maximum power dissipation within each junction box is as follows:

| BOX TYPE | Maximum Power Dissipation (Watts) |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |                     |           | Max Cable Length per Terminal (M) |
|----------|-----------------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|-----------|-----------------------------------|
|          | T <sub>rating</sub>               | T <sub>rating</sub> | T <sub>rating</sub> | T <sub>rating</sub> | T <sub>rating</sub> | T <sub>rating</sub> | T <sub>rating</sub> | T <sub>rating</sub> | T <sub>rating</sub> | T <sub>rating</sub> | T <sub>rating</sub> | T <sub>rating</sub> | T <sub>rating</sub> | T <sub>rating</sub> |           |                                   |
|          | T <sub>6</sub>                    | 80°C                | -60/+40°C           | T <sub>6</sub>      | 80°C                | -60/+55°C           | T <sub>6</sub>      | 80°C                | -60/+65°C           | T <sub>5</sub>      | 80°C                | -60/+40°C           | T <sub>5</sub>      | 80°C                | -60/+85°C |                                   |
| PL612    | 4.1                               |                     |                     | 2.5                 |                     |                     | 1.5                 |                     |                     | 5.6                 |                     |                     | 4.1                 |                     |           | 0.127                             |
| PL615    | 6.4                               |                     |                     | 4.0                 |                     |                     | 2.4                 |                     |                     | 8.8                 |                     |                     | 6.4                 |                     |           | 0.175                             |
| PL620    | 11.4                              |                     |                     | 7.1                 |                     |                     | 4.2                 |                     |                     | 15.6                |                     |                     | 11.4                |                     |           | 0.240                             |
| PL628    | 11.4                              |                     |                     | 7.1                 |                     |                     | 4.2                 |                     |                     | 15.6                |                     |                     | 11.4                |                     |           | 0.275                             |
| PL630    | 20.8                              |                     |                     | 13.0                |                     |                     | 7.8                 |                     |                     | 28.6                |                     |                     | 20.8                |                     |           | 0.365                             |

The maximum number of terminals which may be fitted into each junction box is calculate using the following formula:

$$\text{Power} = I^2 \times N (R_t + R_c) \text{ Watts}$$

Where:

I = Actual current through the conductor up to the maximum permitted certified current of the terminal when fitted in a junction box (Amps).

N = Number of terminals

R<sub>t</sub> = Terminal resistance (Ohms at 20°C)

R<sub>c</sub> = Resistance of one conductor (Ohms at 20°C) when using a maximum diagonal cable length listed in the above table.

Earth facilities and cable entries are described on the component certificate for the empty enclosures Baseefa06ATEX0116U. A suitable certified internal rail mounted earth terminal may be used. If a 'clean earth' is required a rail mounted power terminal may be used.

When required a component certified breather, drain or breather-drain may be fitted to the junction box as specified on the component certificate Baseefa06ATEX0116U. When fitted the IP rating of the junction box is reduced to the IP rating of the breather drain fitted, but must be at least IP54, and may no longer be suitable for category 2D. Breather drains must be installed in their correct orientation in the bottom face of the junction box.

### 16 Report Number

GB/BAS/Ex/TR06.0033/00



**17 Special Conditions for Safe Use**

1. When used under dust layers the maximum depth shall be no greater than 50mm.
2. Unused cables entries must be fitted with the following stopping plugs:  
Hawke type 375 to Baseefa06ATEX0236U / IECEx BAS 06.0056U  
Hawke type 387 to Baseefa06ATEX0118U / IECEx BAS 06.0029U  
Redapt type PU-E-4 to SIRA00ATEX3091  
Redapt type PU-D to SIRA00ATEX1094  
Raxton types CK, CQ, CF and CB to SIRA00ATEX1073U  
  
The enclosure is limited to the temperature range of the stopping plug fitted.
3. Any breathing and draining device must be installed in its correct orientation in the bottom face of the enclosure.
4. All terminal screws, used and unused, shall be fully tightened down by the end user.
5. Insulation of conductors must extend to within 1mm of the metal of the terminal throat unless specified otherwise on the terminal certificate.
6. No more than one single or multi-stranded lead shall be connected to either side of any terminal unless multiple conductors have been joined in a suitable manner, e.g. two conductors into a single insulated bootlace ferrule, or any method indicated on the terminal certificate.
7. Terminals shall be installed in such a manner that the creepage and clearance distances between the terminal and adjacent components, enclosure walls and covers complying with the requirements of IEC 60079 for the rated voltage of the equipment.
8. Terminal temperatures must not exceed the operating range specified on the component certificate.
9. All terminals, and accessories such as cross-connectors, shall be installed in accordance with the terminal manufactures instructions. Hawke International will supply the relevant terminal manufacturer's instructions with each junction box covered by this certificate.
10. The maximum voltage, current and dissipated power shown on the rating label must not be exceeded.
11. When connecting conductors of cross section below the maximum allowed for the particular terminal then the maximum amps per pole must be reduced inline with the maximum amps permitted for a terminal equivalent to the conductor size fitted e.g. If a terminal that can take a 10mm<sup>2</sup> conductor at 40Amps is fitted with a 4mm<sup>2</sup> conductor then the current shall be reduced to a maximum of 22Amps, or the rating marked on the apparatus label, whichever is the lower.

**18 Essential Health and Safety Requirements**

All relevant Essential Health and Safety Requirements are covered by the standards listed at item 9.

**19 Drawings and Documents**

| Number | Sheet | Issue | Date     | Description               |
|--------|-------|-------|----------|---------------------------|
| C2542  | -     | B     | 31/07/06 | PL6** General Arrangement |
| 9004   | -     | B     | 03/08/06 | PL626 General Arrangement |

All drawings are common to and held on IECEx BAS 06.0028X



**1 SUPPLEMENTARY EC - TYPE EXAMINATION CERTIFICATE**

**2 Equipment or Protective System Intended for use in Potentially Explosive Atmospheres  
Directive 94/9/EC**

**3 Supplementary EC - Type Examination Certificate Number: Baseefa06ATEX0117X/1**

**4 Equipment or Protective System: PL6\*\* RANGE OF JUNCTION BOXES**

**5 Manufacturer: HAWKE INTERNATIONAL**

**6 Address: Oxford Street West, Ashton-under-Lyne, Lancashire, OL7 0NA**

**7 This supplementary certificate extends EC – Type Examination Certificate No. Baseefa06ATEX0117X to apply to equipment or protective systems designed and constructed in accordance with the specification set out in the Schedule of the said certificate but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.**

This supplementary certificate shall be held with the original certificate.

This certificate may only be reproduced in its entirety, without any change, schedule included.

Baseefa Customer Reference No. 0500

Project File No. 10/0532

This certificate is granted subject to the general terms and conditions of Baseefa. It does not necessarily indicate that the equipment may be used in particular industries or circumstances.

**Baseefa**

Rockhead Business Park, Staden Lane,  
Buxton, Derbyshire SK17 9RZ  
Telephone +44 (0) 1298 766600 Fax +44 (0) 1298 766601  
e-mail [info@baseefa.com](mailto:info@baseefa.com) web site [www.baseefa.com](http://www.baseefa.com)  
Baseefa is a trading name of Baseefa Ltd  
Registered in England No. 4305578. Registered address as above.

R S SINCLAIR  
DIRECTOR  
On behalf of  
Baseefa



**13**

**Schedule**

**14**

**Certificate Number Baseefa06ATEX0117X/1**

**15**

**Description of the variation to the Equipment or Protective System**

**Variation 1.1**

To allow the use of the following stopping plug:

| <b>Manufacturer</b> | <b>Product</b> | <b>Type</b> | <b>Certificate Number</b>                               | <b>IP Rating</b> |
|---------------------|----------------|-------------|---------------------------------------------------------|------------------|
| Hawke               | Stopping Plug  | 387/1       | Sira06ATEX1240U<br>Operating Temperature -20°C to +60°C | IP66             |

**16**

**Report Number**

GB/BAS/TR10.0155/00

**17**

**Special Conditions for Safe Use**

None additional to those listed previously

**18**

**Essential Health and Safety Requirements**

Compliance with the Essential Health and Safety Requirements is not affected by this variation.

**19**

**Drawings and Documents**

None





**SUPPLEMENTARY EC - TYPE EXAMINATION CERTIFICATE**

**Equipment or Protective System Intended for use in Potentially Explosive Atmospheres  
Directive 94/9/EC**

- 3 Supplementary EC - Type Examination Certificate Number: **Baseefa06ATEX0117X/2**
- 4 Equipment or Protective System: **PL6\*\* RANGE OF JUNCTION BOXES**
- 5 Manufacturer: **HAWKE INTERNATIONAL**
- 6 Address: **Oxford Street West, Ashton-under-Lyne, Lancashire, OL7 0NA**
- 7 This supplementary certificate extends EC - Type Examination Certificate No. Baseefa06ATEX0117X to apply to equipment or protective systems designed and constructed in accordance with the specification set out in the Schedule of the said certificate but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.

This supplementary certificate shall be held with the original certificate.

This certificate may only be reproduced in its entirety, without any change, schedule included.

Baseefa Customer Reference No. 0500

Project File No. 10/0718

This certificate is granted subject to the general terms and conditions of Baseefa. It does not necessarily indicate that the equipment may be used in particular industries or circumstances.

**Baseefa**

Rockhead Business Park, Staden Lane,  
Buxton, Derbyshire SK17 9RZ  
Telephone +44 (0) 1298 766600 Fax +44 (0) 1298 766601  
e-mail [info@baseefa.com](mailto:info@baseefa.com) web site [www.baseefa.com](http://www.baseefa.com)  
Baseefa is a trading name of Baseefa Ltd  
Registered in England No. 4305578. Registered address as above.

  
R S SINCLAIR  
DIRECTOR  
On behalf of  
Baseefa



**13**

**Schedule**

**14**

**Certificate Number Baseefa06ATEX0117X/2**

**15**

**Description of the variation to the Equipment or Protective System**

**Variation 2.1**

Addition of further Special Condition for Safe Use regarding closing of unused entries.

**16**

**Report Number**

GB/BAS/TR10.0270/00

**17**

**Additional Special Conditions for Safe Use**

Unused entries may be fitted with alternative stopping plugs and or breather drains to those listed in the schedule. The user is responsible for ensuring that the protection concept, temperature class and relevant IP rating are maintained.

**18**

**Essential Health and Safety Requirements**

Compliance with the Essential Health and Safety Requirements is not affected by this variation.

**19**

**Drawings and Documents**

None



**SUPPLEMENTARY EC - TYPE EXAMINATION CERTIFICATE**

**Equipment or Protective System Intended for use in Potentially Explosive Atmospheres  
Directive 94/9/EC**

- 3 Supplementary EC - Type Examination Certificate Number: **Baseefa06ATEX0117X/3**
- 4 Equipment or Protective System: **PL6\*\* RANGE OF JUNCTION BOXES**
- 5 Manufacturer: **HAWKE INTERNATIONAL**
- 6 Address: **Oxford Street West, Ashton-under-Lyne, Lancashire, OL7 0NA**
- 7 This supplementary certificate extends EC - Type Examination Certificate No. Baseefa06ATEX0117X to apply to equipment or protective systems designed and constructed in accordance with the specification set out in the Schedule of the said certificate but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.
- 8 Item 9 of the original Certificate is replaced by "Compliance with the Essential Health and Safety Requirements has been assured by compliance with:  
**IEC 60079-0: 2011 EN 60079-7: 2007 EN 60079-31: 2009**  
except in respect of those requirements listed at item 18 of the Schedule."
- 9 The marking of the equipment has changed from the original Certificate and shall include the following:  
**Ex II 2GD Ex e IIC T(see schedule) Gb Ex tb IIIC T80°C Db IP66 and IP67  
Tamb -60°C to +(see schedule)**

This certificate shall be held with the original certificate and may only be reproduced in its entirety, without any change, schedule included.

Baseefa Customer Reference No. 0500

Project File No. 12/0352

This certificate is granted subject to the general terms and conditions of Baseefa. It does not necessarily indicate that the equipment may be used in particular industries or circumstances.

**Baseefa**

Rockhead Business Park, Staden Lane,  
Buxton, Derbyshire SK17 9RZ  
Telephone +44 (0) 1298 766600 Fax +44 (0) 1298 766601  
e-mail [info@baseefa.com](mailto:info@baseefa.com) web site [www.baseefa.com](http://www.baseefa.com)  
Baseefa is a trading name of Baseefa Ltd  
Registered in England No. 4305578. Registered address as above.

  
R S SINCLAIR  
DIRECTOR  
On behalf of  
Baseefa



13

## Schedule

14

Certificate Number Baseefa06ATEX0117X/3

### 15 Description of the variation to the Equipment or Protective System

#### Variation 3.1

To confirm that the equipment covered by this certificate has been reviewed against the requirements of IEC 60079-0: 2011, EN 60079-7: 2007, EN 60079-31: 2009 in respect of the differences from EN 60079-0: 2004, EN 60079-7: 2003, EN 61241-0: 2004 and EN 61241-1:2004, and the equipment has been assessed and is in compliance with the requirements of the latest standards.

The marking is now as follows:

Ⓔ II 2GD Ex e IIC T(see schedule) Gb Ex tb IIIC T80°C Db IP66 and IP67

Tamb -60°C to +(see schedule)

### 16 Report Number

GB/BAS/TR12.0113/00

### 17 Specific Conditions of Use

None additional to those listed previously

### 18 Essential Health and Safety Requirements

Compliance with the Essential Health and Safety Requirements is not affected by this variation.

### 19 Drawings and Documents

| Number | Sheet  | Issue | Date     | Description                                        |
|--------|--------|-------|----------|----------------------------------------------------|
| C2542  | ---    | C     | 03/04/12 | General arrangement type 'PL6' series junction box |
| 9004   | 1 of 1 | C     | 03/04/12 | PL626 Certification drawing                        |

Drawings held on IECEx BAS 06.0028X and common to Baseefa06ATEX0117X



**1 SUPPLEMENTARY EC - TYPE EXAMINATION CERTIFICATE**

**2 Equipment or Protective System Intended for use in Potentially Explosive Atmospheres  
Directive 94/9/EC**

**3 Supplementary EC - Type Examination Certificate Number: Baseefa06ATEX0117X/4**

**4 Equipment or Protective System: PL6\*\* RANGE OF JUNCTION BOXES**

**5 Manufacturer: HAWKE INTERNATIONAL**

**6 Address: Oxford Street West, Ashton-under-Lyne, Lancashire, OL7 0NA**

**7 This supplementary certificate extends EC - Type Examination Certificate No. Baseefa06ATEX0117X to apply to equipment or protective systems designed and constructed in accordance with the specification set out in the Schedule of the said certificate but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.**

This supplementary certificate shall be held with the original certificate.

Baseefa Customer Reference No. **0500**

Project File No. **15/0106**

This document is issued by the Company subject to its General Conditions for Certification Services accessible at <http://www.sgs.com/cn/Tcrms-and-Conditions.aspx> and the Supplementary Terms and Conditions accessible at <http://www.baseefa.com/terms-and-conditions.asp>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained herein reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. It does not necessarily indicate that the equipment may be used in particular industries or circumstances. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, schedule included, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

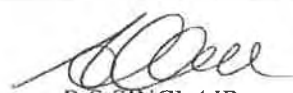
**SGS Baseefa Limited**

Rockhead Business Park, Staden Lane,  
Buxton, Derbyshire SK17 9RZ

Telephone +44 (0) 1298 766600 Fax +44 (0) 1298 766601  
e-mail [info@baseefa.com](mailto:info@baseefa.com) web site [www.baseefa.com](http://www.baseefa.com)

Registered in England No. 4305578

Registered address: Rossmore Business Park, Ellesmere Port, Cheshire, CH65 3EN

  
R S SINCLAIR

GENERAL MANAGER

On behalf of SGS Baseefa Limited

13

## Schedule

14

Certificate Number Baseefa06ATEX0117X/4

15

Description of the variation to the Equipment or Protective System

### Variation 4

To add new PL642 and PL644 junction boxes

| BOX<br>TYPE | Maximum Power Dissipation (Watts) |                          |                                  |                        |                          |                                  |                        |                          |                                  |                        |                          |                                  |                        |                          |                                  |                        |                          |                                  | Max. Cable<br>Length per<br>Terminal<br>(M) |
|-------------|-----------------------------------|--------------------------|----------------------------------|------------------------|--------------------------|----------------------------------|------------------------|--------------------------|----------------------------------|------------------------|--------------------------|----------------------------------|------------------------|--------------------------|----------------------------------|------------------------|--------------------------|----------------------------------|---------------------------------------------|
|             | T <sub>amb</sub><br>T6            | T <sub>amb</sub><br>80°C | T <sub>amb</sub><br>-60<br>+40°C | T <sub>amb</sub><br>T6 | T <sub>amb</sub><br>80°C | T <sub>amb</sub><br>-60<br>+55°C | T <sub>amb</sub><br>T6 | T <sub>amb</sub><br>80°C | T <sub>amb</sub><br>-60<br>+55°C | T <sub>amb</sub><br>15 | T <sub>amb</sub><br>80°C | T <sub>amb</sub><br>-60<br>+30°C | T <sub>amb</sub><br>15 | T <sub>amb</sub><br>80°C | T <sub>amb</sub><br>-60<br>+55°C | T <sub>amb</sub><br>T5 | T <sub>amb</sub><br>80°C | T <sub>amb</sub><br>-60<br>+65°C |                                             |
| PL642       |                                   | 20.8                     |                                  |                        | 13.0                     |                                  |                        | 7.8                      |                                  |                        | 28.6                     |                                  |                        | 20.8                     |                                  |                        | 15.6                     |                                  | 0.432                                       |
| PL644       |                                   | 20.8                     |                                  |                        | 13.0                     |                                  |                        | 7.8                      |                                  |                        | 28.6                     |                                  |                        | 20.8                     |                                  |                        | 15.6                     |                                  | 0.528                                       |

16

### Report Number

GB/BAS/ExTR15.0222/00

17

### Specific Conditions of Use

None additional to those listed previously

18

### Essential Health and Safety Requirements

Compliance with the Essential Health and Safety Requirements is not affected by this variation.

19

### Drawings and Documents

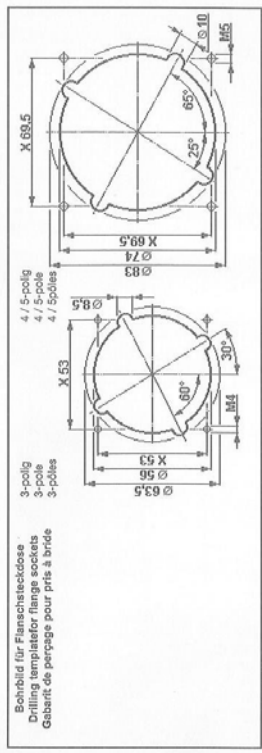
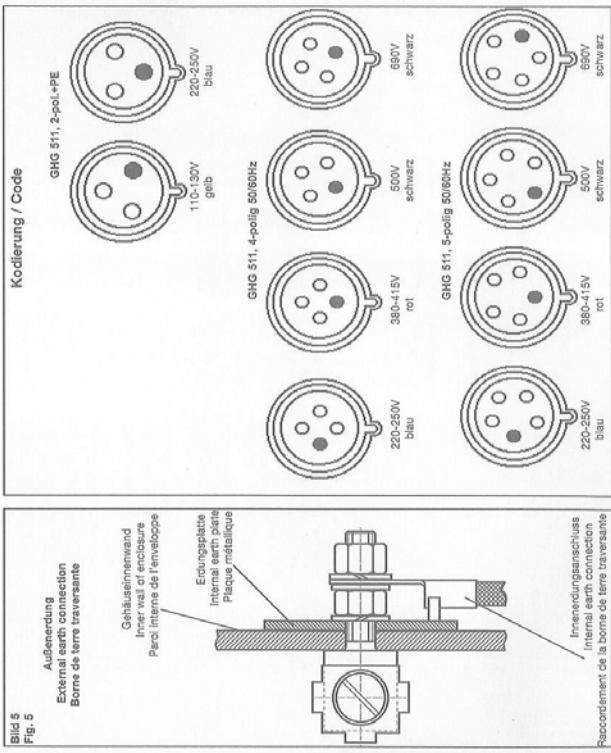
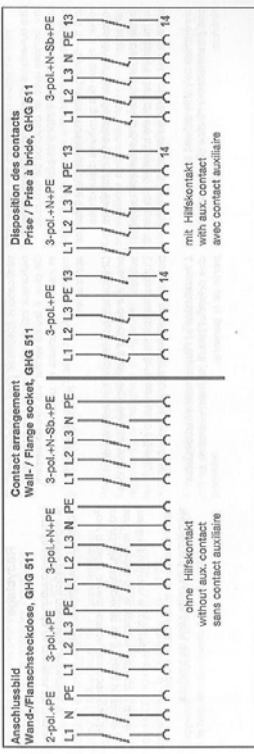
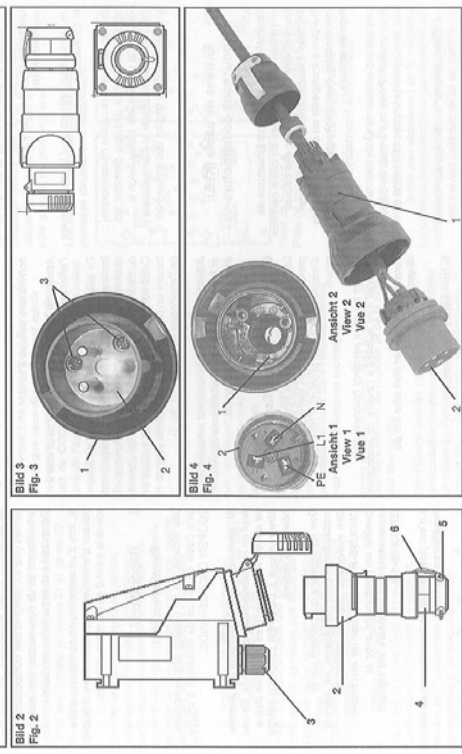
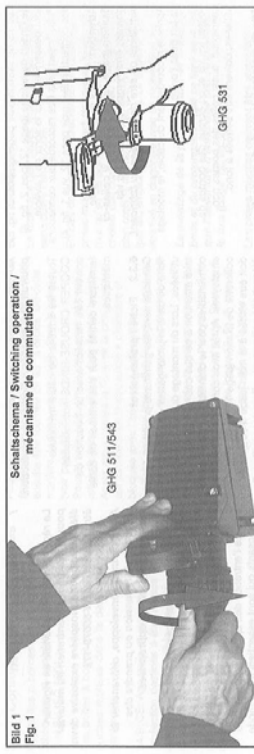
| Number | Issue | Date     | Description                                        |
|--------|-------|----------|----------------------------------------------------|
| C2542  | D     | 29/07/15 | General Arrangement Type PL6 Series Junction Boxes |

# Plug and Socket Certificates











## EC - TYPE EXAMINATION CERTIFICATE

Equipment or Protective System Intended for use in Potentially Explosive Atmospheres  
Directive 94/9/EC

- EC - Type Examination Certificate Number: **Baseefa12ATEX0095X**
- Equipment or Protective System: **Type 375 Range of Stopping Plugs**
- Manufacturer: **Hawke International**
- Address: **Oxford Street West, Ashton-under-Lyne, Lancashire, OL7 0NA**
- This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.
- Baseefa, Notified Body number 1180, in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive.
- The examination and test results are recorded in confidential Report No. **GB/BAS/ExTR12.0061/00**
- Compliance with the Essential Health and Safety Requirements has been assured by compliance with:  
**EN 60079-0: 2012 EN 60079-7: 2007 EN 60079-31: 2009**  
except in respect of those requirements listed at item 18 of the Schedule.
- If the sign "X" is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.
- This EC - TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified equipment or protective system. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.
- The marking of the equipment or protective system shall include the following :

**Ex II 2GD Ex e IIC Gb Ex tb IIIC Db**

This certificate may only be reproduced in its entirety, without any change, schedule included.

Baseefa Customer Reference No. **0500**

Project File No. **11/0414**

This certificate is granted subject to the general terms and conditions of Baseefa. It does not necessarily indicate that the equipment may be used in particular industries or circumstances.

### Baseefa

Rockhead Business Park, Staden Lane,  
Buxton, Derbyshire SK17 9RZ  
Telephone +44 (0) 1298 766600 Fax +44 (0) 1298 766601  
e-mail [info@baseefa.com](mailto:info@baseefa.com) web site [www.baseefa.com](http://www.baseefa.com)  
Baseefa is a trading name of Baseefa Ltd  
Registered in England No. 4305578. Registered address as above.

  
R S SINCLAIR  
DIRECTOR  
On behalf of  
Baseefa





13

## Schedule

14

Certificate Number Baseefa12ATEX0095X

### 15 Description of Equipment or Protective System

The Type 375 Range of Stopping Plugs are made from natural black plastic and are available in sizes, M16, M20, M25, M32, M40, M50, M63 AND M75, all with 1.5 pitch.

The stopping plug comprises of a 15mm length of thread with a domed head moulded with a hexagonal recess in the top of the head. A nitrile or silicone o-ring is positioned under the head in a groove at the base of the thread.

The stopping plug when fitted in the equipment as specified on D2555 meets the requirements of IP66 and IP67.

### 16 Report Number

GB/BAS/ExTR12.0061/00

### 17 Specific Conditions of Use

1. This Stopping Plug is suitable for use within an operating temperature range of -60°C to +75°C.
2. The Stopping Plug shall maintain the ingress protection rating of the associated increased safety enclosure/junction box.
3. The equipment face shall be smooth.
4. The Stopping Plug shall be mounted perpendicular to the equipment face ensuring that the integral o-ring is evenly compressed against the equipment face.
5. The Stopping Plug may be fitted in either threaded holes or plain holes.
6. Plain holes shall be no larger 0.7mm above the major diameter of the Stopping Plug thread and the plug shall be held in position with a locknut and optional locking washer.
7. For enclosures with tapered walls/draw angles the stopping plug shall be fitted in a threaded hole to ensure the stopping plug remains perpendicular to the equipment face.
8. Warning: M50, M63 and M75 stopping plugs are a potential static ignition risk, clean only with a damp cloth.

### 18 Essential Health and Safety Requirements

All relevant Essential Health and Safety Requirements are covered by the standards listed at item 9.

### 19 Drawings and Documents

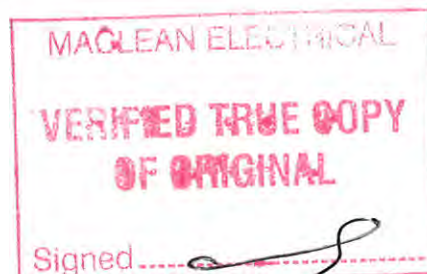
| Number | Sheet  | Issue | Date     | Description                                      |
|--------|--------|-------|----------|--------------------------------------------------|
| D2555  | 1 of 1 | D     | 25/01/11 | ATEX/IECEX 375 stopping plug general arrangement |
| D2556  | 1 of 2 | C     | 23/05/12 | 375 stopping plug detail                         |
| D2556  | 2 of 2 | C     | 23/05/12 | 375 stopping plug detail                         |

The above drawings are common to, and held on, IECEX BAS 12.0065X.



# Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin



## (1) EC-TYPE-EXAMINATION CERTIFICATE (Translation)

(2) Equipment and Protective Systems Intended for Use in  
Potentially Explosive Atmospheres - **Directive 94/9/EC**

(3) EC-type-examination Certificate Number:

**PTB 99 ATEX 1039**



(4) Equipment: Plug-and socket device type GHG 511 .... R....

(5) Manufacturer: CEAG Sicherheitstechnik GmbH

(6) Address: D-69412 Eberbach

(7) This equipment and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

(8) The Physikalisch-Technische Bundesanstalt, notified body No. 0102 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Annex II to the Directive.

The examination and test results are recorded in the confidential report PTB Ex 99-19088.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

**EN 50014:1997**

**EN 50018:1994**

**EN 50019:1994**

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

(11) This EC-type-examination Certificate relates only to the design and construction of the specified equipment in accordance with Directive 94/9/EC. Further requirements of this Directive apply to the manufacture and supply of this equipment.

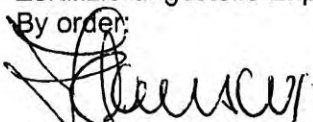
(12) The marking of the equipment shall include the following:

 **II 2 G EEx ed IIC T6 resp. T5**

Zertifizierungsstelle Explosionsschutz

Braunschweig, September 01, 1999

By order:

  
Dr.-Ing. U. Klausmeyer  
Regierungsdirektor



sheet 1/3

EC-type-examination Certificates without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt. In case of dispute, the German text shall prevail.

Physikalisch-Technische Bundesanstalt • Bundesallee 100 • D-38116 Braunschweig

# Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

(13)

## SCHEDULE

(14)

### EC-TYPE-EXAMINATION CERTIFICATE PTB 99 ATEX 1039

(15) Description of equipment

The type GHG 511 ... R ... plug-and-socket device serves to connect portable electrical apparatus or to make connections in potentially explosive atmospheres.

The following variant is permissible: transformer plugs (isolating transformer, class of protection II).

Staggered grooves guarantee that only plugs or socket outlets of identical rated voltage will be used together. Mechanical marking ensures that the plugs of the type GHG 531... V ... plug-and-socket device (Certificate of Conformity PTB No. Ex-85.B.1115) can be used for the wall-mounting socket-outlet and in the coupling.

#### Electrical data

##### **Plug-and-socket device, five-pole**

|                            |       |      |   |
|----------------------------|-------|------|---|
| Rated voltage .....        | up to | 500  | V |
| Rated current.....         | max.  | 16   | A |
| Utilization category ..... |       | AC-3 |   |

##### **Plug-and-socket device, four-pole**

|                            |       |      |   |
|----------------------------|-------|------|---|
| Rated voltage .....        | up to | 690  | V |
| Rated current.....         | max.  | 16   | A |
| Utilization category ..... |       | AC-3 |   |

##### **Plug-and-socket device, three-pole**

|                            |       |      |   |
|----------------------------|-------|------|---|
| Rated voltage .....        | up to | 400  | V |
| Rated current.....         | max.  | 16   | A |
| Utilization category ..... |       | AC-3 |   |

##### **Transformer plug**

|                                |       |     |    |
|--------------------------------|-------|-----|----|
| Rated voltage, primary.....    | up to | 250 | V  |
| Rated voltage, secondary ..... | up to | 42  | V  |
| Power consumption .....        | max.  | 65  | VA |
| Miniature fuse .....           |       | 0.5 | A  |
| Temperature class .....        |       | T 5 |    |

sheet 2/3

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# Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

## SCHEDULE TO EC-TYPE-EXAMINATION CERTIFICATE PTB 99 ATEX 1039

In accordance with the relevant provisions, rated values other than those stated above are permissible, provided the making and breaking capacity is complied with. They have been specified by the manufacturer, dependent on the mode of operation, utilization category etc.

|                                       |     |                 |
|---------------------------------------|-----|-----------------|
| Nominal frequency..... up to          | 400 | Hz              |
| Rated cross-section                   |     |                 |
| Plug..... max.                        | 2.5 | mm <sup>2</sup> |
| Coupling..... max.                    | 4   | mm <sup>2</sup> |
| Wall-mounting socket-outlet .... max. | 4   | mm <sup>2</sup> |

(16) Report PTB Ex 99-19088, description (8 sheets), Annex to the description (11 sheets), 11 drawings

(17) Special conditions for safe use

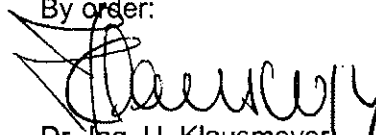
not applicable

(18) Essential health and safety requirements

The tests carried out and their positive results show that the plug-and-socket device meets the requirements of Directive 94/9/EC and of the standards stated on the cover sheet.

Zertifizierungsstelle Explosionsschutz

By order:

  
Dr.-Ing. U. Klausmeyer  
Regierungsrat



Braunschweig, September 01, 1999

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EC-type-examination Certificates without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt. In case of dispute, the German text shall prevail.

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## 1st SUPPLEMENT

according to Directive 94/9/EC Annex III.6

### to CONFORMITY STATEMENT PTB 99 ATEX 1039

(Translation)

Equipment: Plug-and-socket device, type GHG 513 .... R....

Marking:  II 2 G EEx de IIC T6 resp. T5

Manufacturer: CEAG Sicherheitstechnik GmbH

Address: Neuer Weg Nord 49  
D-69412 Eberbach

#### Description of supplements and modifications

The plug-and-socket device of type GHG 513.... R.... is supplemented by an extra-low-voltage version.

#### **Electrical data**

|                                |       |      |      |       |
|--------------------------------|-------|------|------|-------|
| Rated insulating voltage ..... | up to | 60 V |      |       |
| Rated voltage .....            | up to | 50 V | 50 V | 50 V  |
| Rated current .....            | max.  | 16 A | 16 A | 10 A  |
| Utilisation category .....     |       | AC-3 | DC-1 | DC-11 |

Provided the making and breaking capacities are met, rated values other than those specified above are acceptable and will be defined by the manufacturer on the basis of the operating mode, utilisation category, etc.

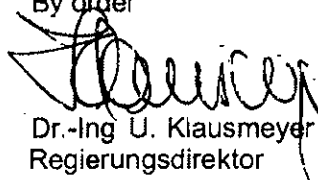
|                           |       |                                     |
|---------------------------|-------|-------------------------------------|
| Rated frequency .....     | up to | 400 Hz                              |
| Rated cross-section ..... | max.  | 2.5 mm <sup>2</sup> finely stranded |
|                           |       | 4 mm <sup>2</sup> stranded          |
| Ambient temperature ..... |       | -55 °C to 55 °C                     |

Test report: PTB Ex 00-19253

Zertifizierungsstelle Explosionsschutz

Braunschweig, January 15, 2001

By order

  
Dr.-Ing. U. Klausmeyer  
Regierungsdirektor



Sheet 1/1

Conformity Statements without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt. In case of dispute, the German text shall prevail.



## 2nd SUPPLEMENT

according to Directive 94/9/EC Annex III.6

### to EC-TYPE-EXAMINATION CERTIFICATE PTB 99 ATEX 1039

(Translation)

Equipment: Plug-and-socket device, type GHG 511 ....R.....

Marking:  II 2 G EEx de IIC T6 or T5

Manufacturer: CEAG Sicherheitstechnik GmbH

Address: Neuer Weg Nord 49  
D-69412 Eberbach, Germany

#### Description of supplements and modifications

The wall-mounting socket outlet, type GHG 511.4.. R..., may also be provided with an auxiliary switch for operation with an intrinsically safe circuit.

#### Intrinsically safe auxiliary circuit

Connection at terminals 3(11), 4(12), and 1 for intrinsically safe circuits EEx [ia] IIC T6 or T5

Only for connection to certified intrinsically safe circuits.

When using the intrinsically safe auxiliary circuit, the protection symbol will change to:

**EEx de [ia] IIC T6 or T5**

The composition of the protection symbol will be based on the types of protection of components actually used.

#### Plug connector

The plug-and-socket device, type GHG 511.... R... , is supplemented by plug connector GHG 531 .7.. V.... (old design) of plug-and-socket device GHG 531 .... V.... (old Certificate of Conformity PTB No. Ex.85.B.1115), which has the same explosion-proof characteristics.

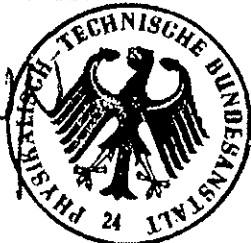
Test report: PTB Ex 02-11086

Zertifizierungsstelle Explosionsschutz

Braunschweig, May 13, 2002

By order:

  
Dr.-Ing. U. Klausmeyer  
Regierungsdirektor



Sheet 1/1

EC-type-examination Certificates without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt. In case of dispute, the German text shall prevail.

## 3rd SUPPLEMENT

according to Directive 94/9/EC Annex III.6

### to EC-TYPE-EXAMINATION CERTIFICATE PTB 99 ATEX 1039

(Translation)

Equipment: Plug-and-socket device, type GHG 511 .... R....

Marking:  II 2 G EEx de [Ia] IIC T6 or T5

Manufacturer: Cooper Crouse-Hinds GmbH previously CEAG Sicherheitstechnik GmbH

Address: Neuer Weg Nord 49  
69412 Eberbach, Germany

#### Description of supplements and modifications

The plug-and-socket device, type GHG 51. .... R.... , may also be manufactured with the following modifications:

- The flange of the type GHG 511 8...R.... socket outlet may also be made from material CuZn 15. This type comes complete with a captive protective cap.
- If the current rating is reduced to 3 A, the plug-and-socket device may be used in ambient temperatures of up to 70 °C. A similar correlation between intermediate values is accepted. Users shall be informed of such values in an adequate form.
- For special voltage ratings, the mechanical characterization 1h, 8h and 12h will be used.
  - 4-pole < 690 V
  - 5-pole < 500 V
  - 3-pole < 400 V
- The plug-and-socket device is supplemented by the plug of type GHG 54. 23..R....
- The plug-and-socket device may also be used in the hazardous area "dust". In that case, the marking is as follows:

 II 2 G/D EEx ed [Ia] IIC T6 or T5 IP 66 T 60 °C

The composition of the protection symbol will be based on the types of protection of the components actually used.

Test report: PTB Ex 04-13042

Zertifizierungsstelle Explosionsschutz  
By order:

Braunschweig, April 01, 2004

Dipl.-Phys. U. Völkel



Sheet 1/1

EC-type-examination Certificates without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt. In case of dispute, the German text shall prevail.

## 4th SUPPLEMENT

according to Directive 94/9/EC Annex III.6

### to EC-TYPE-EXAMINATION CERTIFICATE PTB 99 ATEX 1039

(Translation)

Equipment: Plug-and-socket system, type GHG 511 .... R....

Marking:  II 2 G/D EEx ed [ia] IIC T6 and T5 IP66 T60 °C

Manufacturer: Cooper Crouse-Hinds GmbH

Address: Neuer Weg Nord 49, 69412 Eberbach, Germany

#### Description of supplements and modifications

The explosion-protected 16/20A plug-and-socket system is in future also to be used at ambient temperatures between -25°C and +45°C (see table 1).

Component application Table 1:

| Unit                                                                | Voltage range     | Operating temperature          |
|---------------------------------------------------------------------|-------------------|--------------------------------|
| Wall socket, type GHG 511 .... R<br>Standard version                | 110V AC – 690 VAC | -20°C - +40°C                  |
| Wall socket, type GHG 511 .... M<br>Special version                 | 110V AC – 690 VAC | -25°C - +45°C                  |
| Wall socket, type GHG 511 ....<br>Special version with aux. contact | 110V AC – 690 VAC | -20°C - +40°C<br>-25°C - +45°C |
| Wall socket, type GHG 511 .... M<br>Version with CuZn flange        | 110V AC – 690 VAC | -25°C - +45°C                  |
| Wall socket, type GHG 511 .... R<br>Version up to max. 3A           | 110V AC – 690 VAC | -20°C - +70°C                  |
| Wall socket, type GHG 513 .... R                                    | ≤ 50V AC / DC     | -25°C - +45°C                  |
| Coupler, type GHG 511 .... R<br>Standard version                    | 110V AC – 690VAC  | -20°C - +40°C                  |
| Coupler, type GHG 511 .... M<br>Special version                     | 110V AC – 690 VAC | -25°C - +45°C                  |
| Transformer plug, type GHG 531 6.. *                                | 250V / ≤42V 65 VA | -20°C - +40°C                  |
| Plug, type GHG 511 7... R<br>Standard version                       | 110V AC – 690 VAC | -25°C - +45°C                  |
| Plug, type GHG 531 7... *<br>Special version                        | 110V AC – 690 VAC | -20°C - +40°C                  |
| Plug, type GHG 543 ....                                             | 110V AC – 690 VAC | -25°C - +40°C                  |
| Plug, type GHG 543 ....                                             | ≤ 50V AC / DC     | -25°C - +40°C                  |
| Plug, type GHG 542 ....                                             | ≤ 50V AC / DC     | -25°C - +40°C                  |

\* no EN 61241-0 identification for category 2 D.

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### Electrical data

$\text{sup } \text{formax} = \text{SEON} \setminus \text{AC} \setminus \text{SEONDO}$   
 $\text{SEONDO} \setminus \text{formax} = \text{SEON} \setminus \text{AC}$

Radio frequency:  $f_{RF} = 517500 \text{ Hz}$   
 isochronal version:  $400 \text{ Hz}$

Wind action size:  $pl_{1g} = up to 2.5 mm^2$   
 ice action size:  $pl_{ice} = up to 4 mm^2$

**Plug-and-socket system type: CHGENT, 5-year (3-pole + N + PE)**

Platex Wolfmanex up to 500W/240

Rated current: up to 15/2 DA

Switching to dependency AWC-3. up to 1 EA

Plug and socket system, type CHC-H-1, 4-core (C-P-B-N-PB)

Rating: Violence up to 600,000

Ratio: current: 100 to 1000 A.

Startleblinding equipment: AC-3      up to 1000

Printed on Recycled Paper. 50% G.H.F.L. 100% Recycled Paper.

up to 250,000 MC

[illegible]

Switching capacity: AC-3000 and the 1000 Series A

Plug-and-socket system J-code, type GFG 513.

[illegible]

Postlet's curriculum was the same as the curriculum of the other schools in the district.

Switching between AC-3 and the "EA

Something except, DIC-2, we to "A.

Switching capacity, DDC-11: up to 12 A.

Plasma and soil system 2000, type GT-6 510;

Printed on page: 51W 50 N DC

Rated CONFIDENTIAL WFO 15/01/04

Switching capacity AC-B: up to 70A

Symbolic C: 知天知地 DIC-1 田口 田口

Switching capacity: 100-110 Gbps

Transmission charge, type G-1-G-33 II, 4-pole, 7-pole, etc.

Rated voltage: 250V AC

12V 2.4A 36V 2.4A 230V

2:00 PM 6EVA



## 01.1 Type code

|                                                 |                                    |   |
|-------------------------------------------------|------------------------------------|---|
| Type:                                           | GHG 51                             | R |
| Type =                                          | GHG 51, 16A/20A                    |   |
| Current & voltage                               |                                    |   |
| 1 =                                             | 16 A 110 V - 600 V                 |   |
| 3 =                                             | 16 A 12 V - $\leq 50$ V*           |   |
| * for extra-low voltage wall socket $\leq 50$ V |                                    |   |
| Model                                           |                                    |   |
| 2 =                                             | Plug *                             |   |
| 3 =                                             | Coupler                            |   |
| 4 =                                             | Wall socket                        |   |
| 5 =                                             | Flange socket *                    |   |
| 7 =                                             | Plug                               |   |
| 8 =                                             | Flange socket                      |   |
| * for extra-low voltage $\leq 50$ V             |                                    |   |
| Pole number                                     |                                    |   |
| 2 =                                             | 2-pole *                           |   |
| 3 =                                             | 3-pole *                           |   |
| 3 =                                             | 3-pole (1+N+PE)                    |   |
| 4 =                                             | 4-pole (3+PE)                      |   |
| 5 =                                             | 5-pole (3+N+PE)                    |   |
| * for extra-low voltage $\leq 50$ V             |                                    |   |
| Voltage                                         |                                    |   |
| 00 =                                            | 0h $\leq 24$ V AC                  |   |
| 03 =                                            | 3h 230V AC                         |   |
| 03 =                                            | 3h $\leq 42$ V AC 400Hz *          |   |
| 04 =                                            | 4h 110/130V AC                     |   |
| 05 =                                            | 5h 690V AC                         |   |
| 06 =                                            | 6h 230/415V AC                     |   |
| 07 =                                            | 7h 500V AC                         |   |
| 08 =                                            | 8h special version                 |   |
| 09 =                                            | 9h 127/230V                        |   |
| 10 =                                            | 10h $< 50$ V DC *                  |   |
| 12 =                                            | 12h 42V AC *                       |   |
| * for extra-low voltage $\leq 50$ V             |                                    |   |
| Temperatures                                    |                                    |   |
| R =                                             | -20°C - +40°C                      |   |
| M =                                             | special range see T <sub>amb</sub> |   |
| Version                                         |                                    |   |
| 0 =                                             | plastic                            |   |
| 1 =                                             | stainless steel                    |   |
| 2 =                                             | CuNi                               |   |
| 3 =                                             | internal metal plate               |   |
| 5 - 8 =                                         | with aux. switch                   |   |

Serial number for special versions without effect on explosion protection

## 01.2 Type code

### Special versions

Type:

Type = GHG 5. 16A/20A

Model

531 = plug 4-pole & 5-pole 16A

542 = plug 2-pole & 3-pole 16A\*

543 = plug 3-pole 16A

\* for extra-low voltage  $\leq 50$  V

Version

2 = plug 2-pole & 3-pole

6 = transformer plug 4-pole & 5-pole

7 = plug 4-pole & 5-pole

7 = fused plug \*

\* only for 4-plug & 5-plug versions

Pole number

2 = 2-pole\*

3 = 3-pole\*

4 = 4-pole

5 = 5-pole

\* only for extra-low voltage  $\leq 50$  V

Voltage & time setting

00 = 0h  $\leq 24$  V AC

03 = 3h 230V AC

03 = 3h  $\leq 42$  V AC 400Hz \*

04 = 4h 110/130V AC

05 = 5h 690V AC

06 = 6h 230/415V AC

07 = 7h 500V AC

08 = 8h special version

09 = 9h 230V - 240V

10 = 10h  $< 50$  V DC \*

12 = 12h 42V AC \*

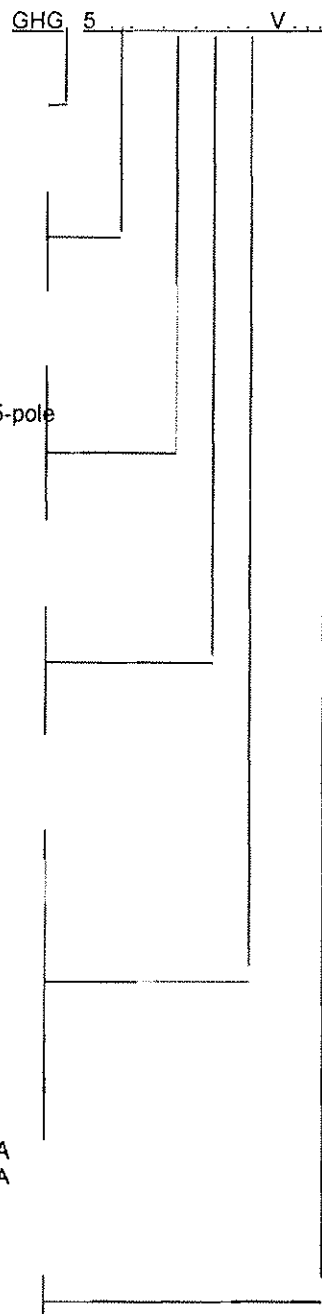
36 = 6h fused plug 6.3 A

66 = 6h transformer plug 65 VA

69 = 9h transformer plug 65 VA

\* for extra-low voltage  $\leq 50$  V

Serial number for special versions  
without effect on explosion protection



Applied standards

EN 60079-0:2006  
EN 60079-11: 2007

EN 60079-1:2007  
EN 61241-0: 2006

EN 60079-7: 2007  
EN 61241-1: 2004

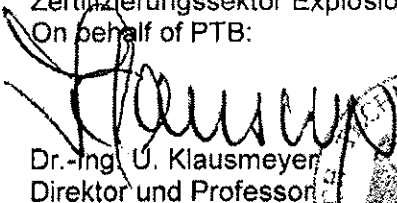
With the application of the above standards, the marking changes to:

 II 2 G Ex de [ia] IIC T6 or T5  
 II 2 D Ex tD A21 IP66 T80 °C

Assessment and Test Report: PTB Ex 09-19075

Zertifizierungssektor Explosionsschutz  
On behalf of PTB:

Braunschweig, September 10, 2010

  
Dr.-Ing. U. Klausmeyer  
Direktor und Professor



Cooper Crouse-Hinds GmbH  
z. Hd. Herrn Setzer  
Neuer Weg-Nord 49  
69412 Eberbach

Ihr Zeichen: Setzer Edgar  
Ihre Nachricht vom: 2012-08-20  
Unser Zeichen: 3.5-3536 /2012-TH  
Unsere Nachricht vom:  
  
Bearbeitet von: Dr.-Ing. Martin Thedens  
Telefondurchwahl: (0531) 592 - 35 10  
(0170) 85 73 177  
Telefaxdurchwahl: (0531) 592 - 35 05  
E-Mail: Martin.Thedens@ptb.de  
http://www.explosionsschutz.ptb.de  
Datum: 29. August 2012

### Schriftliche Freigabe zu PTB 99 ATEX 1039, PTB 00 ATEX 1070 und PTB 01 ATEX 1069

Sehr geehrter Herr Setzer,

es bestehen keine sicherheitstechnischen Bedenken die Wandsteckdosen 16A - GHG 511...., 63A - GHG 514.... und 125A - GHG 515.... auch mit einer Signalleuchte, entsprechend den Zeichnungen 16A 3-pol. GHG 511-1-4597, 16A 5-pol. GHG 511-1-4598, 63A 5-pol. GHG 514-1-4599 und 125A 5-pol. GHG 515-1-4600 (siehe Prüfbericht PTB Ex 12-12239) zu produzieren.

Die Signalleuchte soll wahlweise zwei Funktionen erfüllen. Zum einen als Betriebskontrollleuchte für die Ein- und Aus-Funktionsanzeige, zum anderen als eine Bereitschaftsmeldungsanzeige, um zu erkennen, ob am Schalter der Steckdose Spannung anliegt.

Die Steckvorrichtungen können mit folgenden Parametern eingesetzt werden:

| Typ           | IP Schutzart | $T_{amb}$     | Temperaturklasse |
|---------------|--------------|---------------|------------------|
| GHG 511. 16A  | IP 65        | -20°C - +40°C | T6/ T5           |
| GHG 514. 63A  | IP 66        | -20°C - +40°C | T6/ T5           |
| GHG 515. 125A | IP 66        | -20°C - +40°C | T6/ T5           |

There are no safety-related objections to produce the sockets 16A - GHG 511...., 63A - GHG 514.... and 125A - GHG 515.... with a pilot lamp according the drawings 16A 3-pol. GHG 511-1-4597, 16A 5-pol. GHG 511-1-4598, 63A 5-pol. GHG 514-1-4599 and 125A 5-pol. GHG 515-1-4600 (see test report PTB Ex 12-12239).

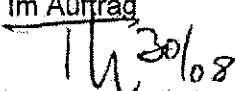
The signal lamp optionally fulfills one of the two following functions: one is as an operating control lamp for the On / Off - function display, the other as a standby indicating signal if there is voltage on the socket switch.

The metallic plug and socket system can be used with following parameters:

| Type          | IP grade | $T_{amb}$     | Temperature Class |
|---------------|----------|---------------|-------------------|
| GHG 511. 16A  | IP 65    | -20°C - +40°C | T6/ T5            |
| GHG 514. 63A  | IP 66    | -20°C - +40°C | T6/ T5            |
| GHG 515. 125A | IP 66    | -20°C - +40°C | T6/ T5            |

Mit freundlichen Grüßen

Im Auftrag

  
Dr.-Ing. Martin Thedens  
Oberregierungsrat



# Eexd Enclosure Certificates

**Customer :** Blue Manta International Ltd  
**Purchase Order No :** 0000010113  
**Project Reference :** Q1920501  
**Serial No :** 19205-1



**PDC** | Systems Limited

Electrical and Instrumentation Systems,  
Project Design, Manufacture and Installation

Scarborough House  
CraigearnBusinessPark  
Morrison Way  
Kintore  
Aberdeenshire  
United Kingdom  
AB51 0TH

Tel: +44(0)1467 633355      Fax: +44(0)1467 632440  
[www.pdcsystems.co.uk](http://www.pdcsystems.co.uk)

**Ex Rated Distribution Board**

**ATEX Approved**

# Contents



| Section | Description                                                                                                             |
|---------|-------------------------------------------------------------------------------------------------------------------------|
| 1       | Enclosure Installation & Safety Instructions                                                                            |
| 2       | Certificate of Conformity                                                                                               |
| 3       | CE Declaration of Conformity                                                                                            |
| 4       | Quality Test Certificate                                                                                                |
| 5       | Drawings : CPFG Panel <ul style="list-style-type: none"><li>• General Arrangement</li><li>• Bill of Materials</li></ul> |
| 6       | ATEX Certification                                                                                                      |

**PDC Systems Limited**  
Electrical & Instrumentation Systems,  
Project Design, Management,  
Manufacture and Installation.

Company Registered No:- SC400732

Scarborough House  
Craigearn Business Park  
Morrison Way  
Kintore  
Aberdeenshire  
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Tel: +44 (0)1467 633355  
Fax: +44 (0)1467 632440  
Mobile: 07850 796037  
Home: +44 (0)1467 622965

VAT Registered Number:- 115 1685 31

# Enclosure Installation and Safety Instructions



Equipment : Boxes, Switchgears and Rack Assemblies for Hazardous Areas.

Series : EJB

Note : Please read these instructions carefully before installing, taking into operation and maintaining this equipment.

**Safety Notice :** The Enclosures covered by this operating instructions are cast during manufacture and are to be considered as heavy, care is to be taken whilst handling or installing enclosures.

**Reference to material handling and lifting is the responsibility of the personnel handling the enclosures.**

## **Contents:-**

1. Safety instructions
2. Conformity with Standards
3. Technical Data
4. Installation
5. Taking into Operation
6. Maintenance

## **1. Safety Instructions**

These operating instructions shall not be kept inside the boxes during operations.

Unauthorised Changes of the Design and Modifications to the Boxes are **NOT** permitted.

***Whilst undertaking any servicing on the equipment boxes, switchgear or rack assemblies, the National Safety rules and regulations for Prevention of Accidents have to be observed as well as the Safety Instructions Included in these operating instructions and set in Italics the same as this text!***

***These boxes are suitable for use in Zone I and Zone II hazardous areas acc. To IEC 60079-17.***

***Not to be used in Zone 0!***

**PDC Systems Limited**  
Electrical & Instrumentation Systems,  
Project Design, Management,  
Manufacture and Installation.

Company Registered No:- SC400732

Scarborough House  
Craigearn Business Park  
Morrison Way  
Kintore  
Aberdeenshire  
AB51 0TH

Tel: +44 (0)1467 633355  
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VAT Registered Number:- 115 1685 31



## 2. Conformity with Standards

Compliance with the Essential Health & Safety Requirements has been assured by compliance with the following standards :

|                            |                            |
|----------------------------|----------------------------|
| <b>BS EN 60079-0:2009</b>  | <b>(IEC 60079-0:2007)</b>  |
| <b>BS EN 60079-1:2007</b>  | <b>(IEC 60079-1:2007)</b>  |
| <b>BS EN 60079-11:2007</b> | <b>(IEC 60079-11:2006)</b> |

It also complies with the EC Directive for “Apparatus and protective systems for use in explosive atmospheres” (94/9/EC)

It has been designed, manufactured and tested in accordance to the state of the art and according to EN29001 (ISO9001)

This apparatus is suitable for use in explosive atmospheres, Zone 1 & Zone 2 according to IEC60079-10

## 3. Technical Data

These boxes can include the following:

|                            |                                         |
|----------------------------|-----------------------------------------|
| Bus –Bar                   | Control & Operation Circuits            |
| Terminals                  | Servomotors without ventilation         |
| Low Voltage Transformers   | Starters & Ballasts for Discharge Lamps |
| Air Circuit Breakers       | Electronic Apparatus                    |
| Automatic Circuit Breakers | Associated Intrinsic Safety Apparatus   |

|                                            |                                                                                                                                                   |                                                                                                               |                                                                                                                     |                                                                                                                 |
|--------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| Protection Mode                            |  II 2 G<br>Ex d IIB                                              |  II 2 (1) G<br>Ex d [ia] IIB |  II 2 (1/2) G<br>Ex d [ia/ib] IIB |  II 2 (2) G<br>Ex d [ib] IIB |
| Thermal Class                              | According to power dissipation of the internal components, see label in the supplied equipment.                                                   |                                                                                                               |                                                                                                                     |                                                                                                                 |
| Protection                                 | IP65 acc. EN60529                                                                                                                                 |                                                                                                               |                                                                                                                     |                                                                                                                 |
| Certificate of conformity                  | LOM 03ATEX2046 X<br>The mark X indicates that the equipment or protective system is subject to special conditions for safe use. (See Certificate) |                                                                                                               |                                                                                                                     |                                                                                                                 |
| Ambient Temperature                        | -20 to +55°C                                                                                                                                      |                                                                                                               |                                                                                                                     |                                                                                                                 |
| Storage Temperature<br>In original packing | -40 to +60°C                                                                                                                                      |                                                                                                               |                                                                                                                     |                                                                                                                 |
| Rated Voltage                              | < 750V                                                                                                                                            |                                                                                                               |                                                                                                                     |                                                                                                                 |
| Rated Current                              | < 1200A                                                                                                                                           |                                                                                                               |                                                                                                                     |                                                                                                                 |
| Material                                   | Copper Free Aluminium<br>Coated in Grey Epoxy Double Component                                                                                    |                                                                                                               |                                                                                                                     |                                                                                                                 |
| Cable Entries                              | Up to M100 according to needs, different types of threads according to needs.                                                                     |                                                                                                               |                                                                                                                     |                                                                                                                 |

***Only Ex d IIB minimum certified cable glands or seals suitable for the kind of cable, to be used for handling and installing these accessories, instructions supplied by manufacture must be followed.***

#### **4. Installation**

***When mounting and operating electrical apparatus for hazardous areas, the relevant national regulations as well as the general rules of engineering will have to be observed.  
Transport and store in original packing only.***

##### **Opening and closing of boxes**

***The opening of boxes shall always be without Voltage.***

To slacken or tighten the stainless steel screws of the cover with a torque as follows: - M6=9,9Nm, M8=24Nm and M10=30Nm.

##### **Cable entries**

To mount the cable glands or seals selected according to the kind and size of the feeding cable, the instructions supplied by the manufacturer must be followed.

***Unused cable entries have to be closed by an Ex d IIB minimum certified plug, which has to be installed according to the manufacturer instructions.***

##### **Main Connection**

Connect in accordance with the technical documentation of the supplied equipment.

#### **5. Taking into Operation**

***Prior to operation, check the equipment box, switchgear or rack assembly for its proper functioning and electrical installation in compliance with these operating instructions and other applicable regulations.***

Carry out insulation measurements only between L and PE as well as N and PE.

Test voltage 1 kV AC/DC Max

Terminal insulation 5MΩ

Then the boxes have to be tightly closed.

#### **6. Maintenance**

***The user is responsible for the luminaire safe use (applies to luminaries only)***

***The national regulations applicable to the maintenance test and repairing of the apparatus for hazardous areas and the general rules of engineering will have to be observed.***

##### **Maintenance**

The enclosure shall be maintained at regular intervals in accordance with the national regulations. It is recommended to establish an inspection plan in accordance with IEC 60079-17.

During inspection the parts of protection mode must be inspected with special attention.

-do the body, covers and windows have cracks or damages?

-The flange flameproof joint is clean, greased and without damage or corrosion? And are there all closing elements of the enclosure?

-Is there any corrosion on the threads in the cable entries?

-Are the cable entries, blanking plugs and terminals well tightened?

***Flameproof joints have to be permanently greased in order to ensure their protection against corrosion, water tightness and blocking problems.***

***To clean remains of grease and corrosion without using sharp metallic tools (these can damage the joint surface) and to grease with greases thermically and chemically stable with drop point >200 Deg C.***

***I.e. MOLYKOTE BR2 Plus by Dow Corning.***

***If interstice of flange flameproof joint is higher the 0,2mm the equipment has to be sent to the factory for repairing.***

***The reparation of the glass seal has to be done by manufacturer. User is unauthorised for replacing this kind of glass-seal.***

***When enclosure requires repainting, you will have to be careful to ensure that the flameproof joints are completely free from paint.***

#### **Inspection**

To observe the national regulations. The tasks of inspection must be done by qualified personnel.

#### **Repair**

***For any equipment reparation use original spare parts from manufacturer.***

To observe the national regulations. The tasks of reparation must be done by qualified personnel.

***In case of doubt check with the technical services of PDC Systems, or CEAG Nortem.***

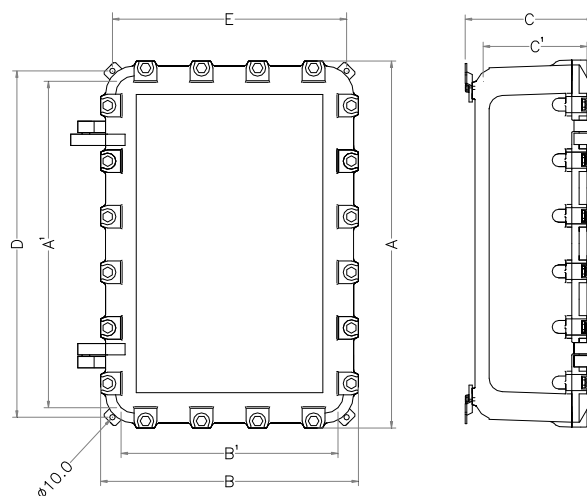
#### **Spare Parts and Accessories.**

|                                    |                   |               |
|------------------------------------|-------------------|---------------|
| -Stainless steel screw             | M6 x 15 - DIN933, | ref 502112911 |
|                                    | M8 x 20 - DIN933, | ref 444112203 |
|                                    | M10 x 35 DIN933,  | ref 501112237 |
| -Hinge Screw,                      |                   | ref 111117198 |
| -Grease – Molykote BR2 Plus (100g) |                   | ref BR2       |

Fig1

| Enclosure Type | External Dimension's |     |     | Internal Dimension's |                |                | Fixings |     | Weight |
|----------------|----------------------|-----|-----|----------------------|----------------|----------------|---------|-----|--------|
|                | A                    | B   | C   | A <sup>1</sup>       | B <sup>1</sup> | C <sup>1</sup> | D       | E   |        |
| EJB 12 R       | 215                  | 131 | 102 | 178                  | 89             | 57             | 242     | 188 | 3,00   |
| EJB 12 A       | 215                  | 131 | 162 | 178                  | 89             | 110            | 242     | 188 | 3,60   |
| EJB 14 R       | 412                  | 150 | 143 | 358                  | 103            | 85             | 436     | 178 | 8.30   |
| EJB 23 R       | 336                  | 217 | 212 | 276                  | 163            | 152            | 316     | 202 | 11,00  |
| EJB 110        | 373                  | 373 | 230 | 305                  | 305            | 162            | 310     | 310 | 22,00  |
| EJB 120        | 474                  | 373 | 230 | 405                  | 305            | 162            | 414     | 310 | 28.50  |
| EJB 121        | 474                  | 373 | 295 | 405                  | 305            | 235            | 414     | 310 | 32,00  |
| EJB 130        | 577                  | 373 | 230 | 518                  | 305            | 162            | 520     | 310 | 35,30  |
| EJB 131        | 577                  | 373 | 295 | 518                  | 305            | 235            | 520     | 310 | 39,00  |
| EJB 240        | 680                  | 474 | 230 | 619                  | 405            | 162            | 624     | 414 | 53,20  |
| EJB 241        | 680                  | 474 | 295 | 619                  | 405            | 235            | 624     | 414 | 58,80  |

|                   |                               |                       |
|-------------------|-------------------------------|-----------------------|
| <b>EJB 241 M1</b> | with transparent window cover | Dimension's 230 x 255 |
| <b>EJB 241 M2</b> | with transparent window cover | Dimension's 465 x 255 |
| <b>EJB 120 M3</b> | with transparent window cover | Dimension's 110 x 75  |
| <b>EJB 120 M4</b> | with transparent window cover | Dimension's 180 x 140 |



Document No:- PDC-010 (Enclosure Installation Safety)  
Date:- 01/12/2011  
Revision:- 03

**PDC Systems Limited**  
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Company Registered No:- SC400732

Scarborough House  
Craigearn Business Park  
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Kintore  
Aberdeenshire  
AB51 0TH

Tel: +44 (0)1467 633355  
Fax: +44 (0)1467 632440  
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# Certificate of Conformity



## Ex Rated Distribution Board

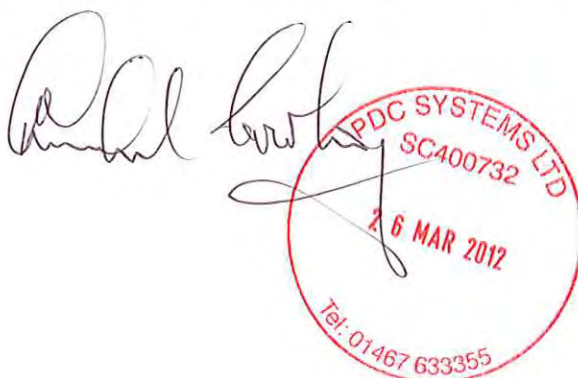
Serial No: - 19205-1

|                            |                                               |
|----------------------------|-----------------------------------------------|
| Date                       | 26/03/12                                      |
| Contract Reference         | Q1920501                                      |
| Customer                   | Blue Manta International Ltd                  |
| Client Purchase Order      | 0000010113                                    |
| Location                   | Aberdeen                                      |
| PDC Systems Serial No.     | 19205-1                                       |
| CEAG Reference             | 25135213-006                                  |
| Equipment                  | As Detailed Within This Manual                |
| Products Supplied          | Refer to Section 'Bill of Materials'          |
| Certificates of Conformity | Refer to Section 'Certificates of Conformity' |

**PDC Systems Ltd.** hereby certifies that all material and equipment furnished on the subject's order(s) are in conformance with applicable specifications as outlined in your purchase order(s), as agreed, by **PDC Systems Ltd.** All material used in the construction of the equipment in question is new and not used, and its quality is in accordance with mutually accepted specifications.

Further all material and equipment have been subjected to and passed the original equipment manufacturers standard inspection and performance tests, in addition to Factory Acceptance Testing, carried out to **PDC Systems Ltd** Standard Tests.

Richard Cowling,  
Manager.



**PDC Systems Limited**  
Electrical & Instrumentation Systems,  
Project Design, Management,  
Manufacture and Installation.

Company Registered No:- SC400732

MD 006A-2 Rev 0

Scarborough House  
Craigearn Business Park  
Morrison Way  
Kintore  
Aberdeenshire  
AB51 0TH

Tel: +44 (0)1467 633355  
Fax: +44 (0)1467 632440  
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## Declaration of Conformity - CE

CE - Declaración de conformidad

CE - Déclaration de conformité

EG - Konformitätserklärung

**LOM 03 ATEX 2046X**



|                                                                                                                        |                                                                                                                                   |                                        |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|
| <b>We</b>                                                                                                              | <b>PDC Systems Ltd</b><br>Scarborough House,<br>Craigearn Business Park<br>Morrison Way<br>Kintore, Aberdeenshire<br>AB51 0TH, UK |                                        |
| <b>Hereby declare in our sole responsibility, that the product:</b>                                                    |                                                                                                                                   |                                        |
| <b>(EJB 12A) II 2 G Exd IIB T6<br/>(Serial No:- 19205-1)</b>                                                           |                                                                                                                                   |                                        |
| <b>Notified Body - Notification Number</b>                                                                             | <b>SIRA 0518 - SIRA 03 ATEX M269</b>                                                                                              |                                        |
| <b>Address</b>                                                                                                         | <b>Rake Lane, Eccleston, Chester, CH4 9JN. UK.</b>                                                                                |                                        |
| <b>Which is the subject of this declaration, is in conformity with the following standards or normative documents:</b> |                                                                                                                                   |                                        |
| <b>Terms of the directive</b>                                                                                          | <b>Title and/or No. And date of issue of the standards</b>                                                                        |                                        |
| <b>Which is the subject of this declaration, is in conformity with the following standards or normative documents:</b> |                                                                                                                                   |                                        |
| <b>94/9/CE:</b>                                                                                                        | <b>EN 60079-0:2009</b>                                                                                                            |                                        |
| <b>Equipment and protective systems intended for use in potentially explosive atmospheres</b>                          | <b>EN 60079-1:2007</b>                                                                                                            |                                        |
|                                                                                                                        | <b>EN 60079-11:2007</b>                                                                                                           |                                        |
| <b>Kintore,<br/>26th March 2012</b>                                                                                    | <b>R. Cowling.</b>                                                                                                                | <b>P.Cowling</b>                       |
| <b>Place and date</b>                                                                                                  | <b>Authorised Person</b>                                                                                                          | <b>Head of quality assurance dept.</b> |

PDC Systems Limited  
Electrical & Instrumentation Systems,  
Project Design, Management,  
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MD 006A-2 Rev 0

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Kintore  
Aberdeenshire  
AB51 0TH



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# Quality Test Certificate

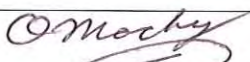


## Ex Rated Distribution Board

Serial No: - 19205-1

|                                                  |                              |
|--------------------------------------------------|------------------------------|
| Date                                             | 23/03/12                     |
| Contract Reference                               | Q1920501                     |
| Customer                                         | Blue Manta International Ltd |
| PDC Systems Serial No.                           | 19205-1                      |
| Nortem Enclosure Reference                       | 25135213-006                 |
| Enclosure Type                                   | EJB12A                       |
| Reference Drawing<br>(GA/Drilling/Layout/Wiring) | Ex-D1920501 & 80             |

| Test Made                                | Test Settings    | Result<br>(Pass / Fail) | Checked<br>By |
|------------------------------------------|------------------|-------------------------|---------------|
| Hydraulic Test for duration >10 Seconds  | Refer ATEX Cert. | ✓                       | AM            |
| Exd Mechanisations According to Drawings | Visual           | ✓                       | AM            |
| Enclosure Dimensional Check              | Visual           | ✓                       | AM            |
| Check Flame Path for Damage              | Visual           | ✓                       | AM            |
| Check Flame Path for Trueness            | Visual           | ✓                       | AM            |
| Check Flame Path Gap                     | Feeler Gauge     | ✓                       | AM            |
| Check MCB's Operation                    | Switch On/Off    | ✓                       | AM            |

|                                                                                               |                  |
|-----------------------------------------------------------------------------------------------|------------------|
| Comments:                                                                                     | PDC Systems Ltd. |
| Signed:    | Date: 23-03-12   |
| Approved:  | Date: 23/03/12   |



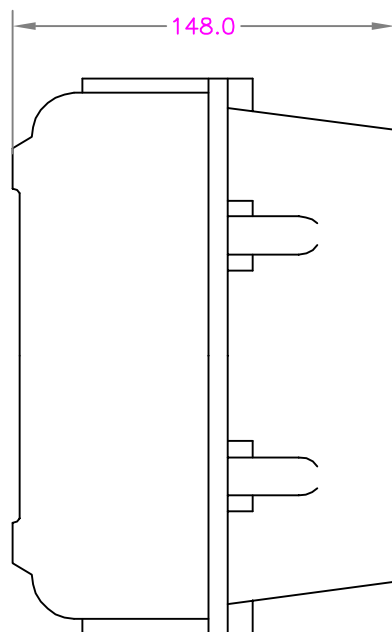
PDC Systems Limited  
Electrical & Instrumentation Systems,  
Project Design, Management,  
Manufacture and Installation.

Company Registered No:- SC400732

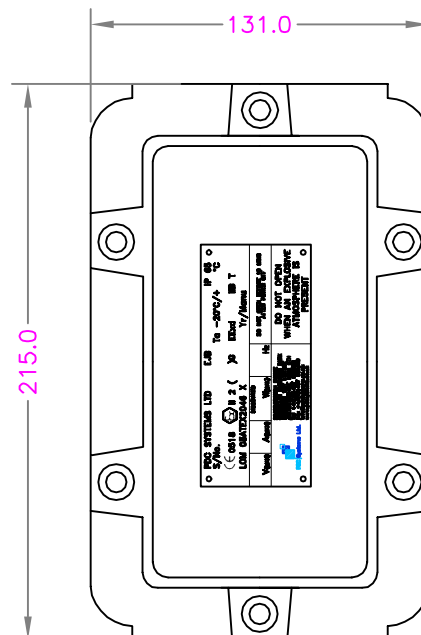
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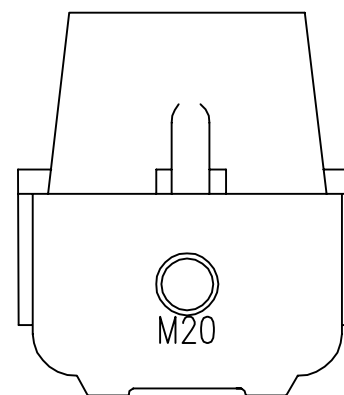
VAT Registered Number:- 115 1685 31



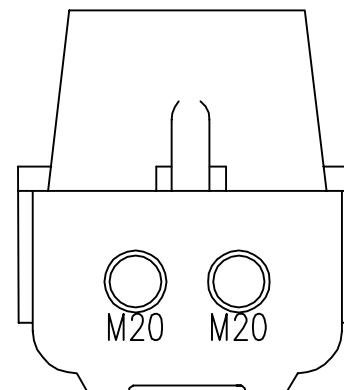
END VIEW



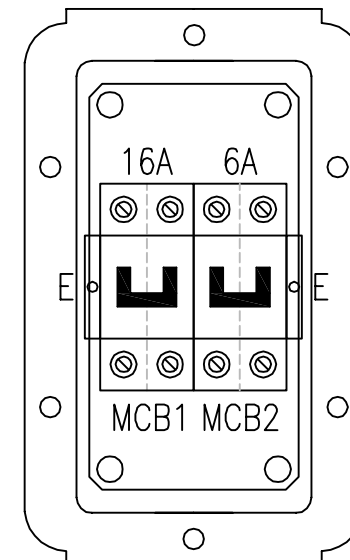
FRONT VIEW



TOP VIEW



BOTTOM VIEW



INTERNAL LAYOUT

ENCLOSURE TYPE: –  
NORTEM EJB 12A  
Exd IIB T6 RATED

CERTIFIED PRODUCT

DRAWING RELATED TO CERTIFIED  
PRODUCT. REFER TO AUTHORISED  
PERSON PRIOR TO MODIFICATION

| REV.                                | DESCRIPTION             | DRAWN | CHECKED | DATE     |
|-------------------------------------|-------------------------|-------|---------|----------|
| 0                                   | As Built                | AS    | RC      | 26/03/12 |
| 1                                   | Issued For Construction | AS    | RC      | 21/03/12 |
| 2                                   | Issued For Comment      | AS    | RC      | ---      |
| PDC SYSTEMS LTD. – ESTABLISHED 1993 |                         |       |         |          |

|                             |                                          |             |            |
|-----------------------------|------------------------------------------|-------------|------------|
| CLIENT                      | Blue Manta                               | CLIENT REF. | 0000010113 |
| TITLE                       | Exd MCB Enclosure<br>General Arrangement |             |            |
| PROJECT No.                 | Q1920501                                 | SCALE       | NTS        |
| DRAWING No. (AUTOCAD INDEX) | Ex-D1920501                              | SHEET       | 1 OF 1     |
|                             |                                          | REV.        | 0          |



| Item | Description                                    | Vendor        | Part #       | Qty |
|------|------------------------------------------------|---------------|--------------|-----|
| 1    | Enclosure Aluminium Alloy H215 x W131 x D162mm | Nortem        | EJB-12A      | 1   |
| 2    | 6A Double Pole MCB Type D                      | Allen Bradley | 1462-SP2D060 | 1   |
| 3    | 16A Double Pole MCB Type D                     | Allen Bradley | 1462-SP2D160 | 1   |
| 4    | Earth Terminal Block – EK2.5/35                | Weidmuller    | 066106       | 2   |

CERTIFIED PRODUCT

DRAWING RELATED TO CERTIFIED  
PRODUCT. REFER TO AUTHORISED  
PERSON PRIOR TO MODIFICATION



**PDC Systems Ltd.**

SCARBOROUGH HOUSE, CRAIGEARN BUSINESS PARK,  
MORRISON WAY, KINTORE, ABERDEENSHIRE, AB51 0TH

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| REV.                                | DESCRIPTION             | DRAWN | CHECKED | DATE     |
|-------------------------------------|-------------------------|-------|---------|----------|
| 0                                   | As Built                | AS    | RC      | 26/03/12 |
| 1                                   | Issued For Construction | AS    | RC      | 21/03/12 |
| 2                                   | Issued For Comment      | AS    | RC      | ---      |
| PDC SYSTEMS LTD. – ESTABLISHED 1993 |                         |       |         |          |

|                             |                                        |             |            |
|-----------------------------|----------------------------------------|-------------|------------|
| CLIENT                      | Blue Manta                             | CLIENT REF. | 0000010113 |
| TITLE                       | Exd MCB Enclosure<br>Bill Of Materials |             |            |
| PROJECT No.                 | Q1920501                               | SCALE       | N/A        |
| DRAWING No. (AUTOCAD INDEX) | Ex-D1920580                            | SHEET       | 1 OF 1     |
|                             |                                        | REV.        | 0          |





(1) **EC-TYPE EXAMINATION CERTIFICATE SUPPLEMENT**

(2) Equipment or protective system intended for use in potentially explosive atmospheres.  
Directive 94/9/EC

(3) Supplement nr. 1 of EC-Type Examination Certificate: **LOM 03ATEX2046 X**

(4) Equipment or protective system  
Boxes for electrical apparatus  
Type EJ...

(5) Manufacturer  
PDC Systems Ltd.

(6) Address  
Scarborough House  
Craigearn Business Park  
Morrison Way Kintore  
Aberdeenshire AB51 0TH  
United Kingdom

(7) Test report nr.: **LOM 09.484 UP**

(8) Variations included in this certificate

- 1 Update to the standards EN 60079-0:2006, EN 60079-1:2007 and EN 60079-11:2007
- 2 Update of the manufacturer address

(9) Changes in marking

 II 2 G Ex d IIB T4..T6

 II 2(2) G Ex d[ib] IIB T4..T6

 II 2(1) G Ex d[ia] IIB T4..T6

 II 2(1/2) G Ex d[ia/ib] IIB T4..T6

Temperature classes and ambient temperature ranges are indicated in the base certificate.

(10) Descriptive documents

- Description nr.: EJB-Ext. Nr. 1
- Drawings nr.: IEC60079 Ex Label

| Rev. | Date       |
|------|------------|
| 0    | 2009-01-09 |
| 2    | 2009-01-09 |

Madrid, 2010-01-26

  
Carlos Fernández Ramón  
DIRECTOR OF THE LABORATORY



  
Angel Vega Remesal  
Head of ATEX Area

This supplement must be an inseparable part together with the base certificate **LOM 03ATEX2046 X**

This Certificate is a translation from the original in Spanish. The LOM liability applies only on the Spanish text

*(This document may only be reproduced in its entirety and without any change)*

Page 1 / 1







(1) **SUPLEMENTO DE CERTIFICADO DE EXAMEN CE DE TIPO**

(2) Equipos y sistemas de protección destinados a ser utilizados en atmósferas potencialmente explosivas.  
Directiva 94/9/CE

(3) Suplemento nº 1 del Certificado de Examen CE de Tipo **LOM 03ATEX2046 X**

(4) Equipo o sistema de protección Cajas de aparatación eléctrica  
Type EJ...

(5) Fabricante PDC Systems Ltd.

(6) Dirección Scarborough House  
Craigearn Business Park  
Morrison Way Kintore  
Aberdeenshire AB51 0TH  
Reino Unido

(7) Informe de ensayos nº: **LOM 09.484 UP**

(8) Variaciones incluidas en el certificado

- 1 Actualización las normas EN 60079-0:2006, EN 60079-1:2007 y EN 60079-11:2007
- 2 Actualización de la dirección del fabricante

(9) Cambios en el marcado

 II 2 G Ex d IIB T4..T6

 II 2(2) G Ex d[ib] IIB T4..T6

 II 2(1) G Ex d[ia] IIB T4..T6

 II 2(1/2) G Ex d[ia/ib] IIB T4..T6

Las clases de temperatura y rangos de temperatura ambiente están indicadas en el certificado base.

(10) Documentos descriptivos

- Descripción nº: EJB-Ext. Nr. 1
- Planos nº: IEC60079 Ex Label

| Rev. | Fecha      |
|------|------------|
| 0    | 2009-01-09 |
| 2    | 2009-01-09 |



Madrid, 2010-01-26

Carlos Fernández Ramón  
DIRECTOR DEL LABORATORIO

Angel Vega Remesal  
Responsable del área ATEX Area

Este suplemento deberá formar parte inseparable del certificado base **LOM 03ATEX2046 X**

(Este documento solo puede reproducirse íntegramente y sin cambio alguno)

Pág. 1 / 1







## (1) EC-TYPE EXAMINATION CERTIFICATE

(2) Equipment or protective system intended for use in potentially explosive atmospheres  
Directive 94/9/EC

(3) EC-Type Examination Certificate number **LOM 03ATEX2046 X**

(4) Equipment or Protection System Boxes for electrical apparatus  
Type EJ...

(5) Applicant: PDC Systems Ltd,

(6) Address: Unit 12, Harlaw Way  
Harlaw Industrial Estate, Inverurie  
Aberdeen, Scotland, AB51 4SG  
United Kingdom

(7) This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

(8) Laboratorio Oficial J.M. Madariaga (LOM), notified body number 0163 in accordance with Article 9 of the Directive 94/9/EC of the European Parliament of 23 March 1994, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Annex II to the Directive.  
The examination and test results are recorded in confidential report nr. **LOM 03.308 GP**

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:  
- Standards **EN 50014:1997 + A1:1999 + A2:1999**  
**EN 50018:2000 + A1:2002**  
**EN 50020:2002**

(10) If the sign X is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.

(11) This EC-Type Examination Certificate relates only to the design and construction of this specified equipment or protective system in accordance with the Directive 94/9/EC. Further requirements of the Directive applies to the manufacture and supply of this equipment or protective system. These are not covered by this certificate.

(12) The marking of the equipment or protective system shall include the following:

 II 2G EEx d IIB T4..T6

 II 2(2) G EEx d [ib] IIB T6

 II 2(1) G EEx d [ia] IIB T6

 II 2(1/2) G EEx d [ia/ib] IIB T6

Ta: -20 °C / +55 °C

  
Carlos Fernández Ramón  
DIRECTOR OF THE LABORATORY



Madrid, 17 June 2003

  
Angel Vega Remesal  
Head of TEX area

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## (1) CERTIFICADO DE EXAMEN CE DE TIPO

(2) Equipos y sistemas de protección destinados a ser utilizados en atmósferas potencialmente explosivas.  
Directiva 94/9/CE

(3) Certificado de Examen CE de Tipo **LOM 03ATEX2046 X**

(4) Equipo o sistema de protección Cajas de aparamenta eléctrica  
Tipo EJ...

(5) Solicitante PDC Systems Ltd.

(6) Dirección Unit 12, Harlaw Way  
Harlaw Industrial Estate, Inverurie  
Aberdeen, Scotland, AB51 4SG  
Reino Unido

(7) Este equipo o sistema de protección y sus variantes eventualmente aceptadas está descrito en el anexo del presente certificado y en los documentos descriptivos citados en dicho anexo

(8) El Laboratorio Oficial J.M. Madariaga (LOM), organismo notificado bajo la referencia nº 0163, conforme al artículo 9 de la Directiva 94/9/CE del Parlamento Europeo y del Consejo del 23 de Marzo de 1994, certifica que este equipo o sistema de protección es conforme a los Requisitos Esenciales de Seguridad y Salud relativos al diseño y construcción de equipos y sistemas destinados a ser utilizados en atmósferas potencialmente explosivas, indicados en el Anexo II de la Directiva. La verificaciones y ensayos se recogen en el protocolo confidencial **LOM 03.308 GP**

(9) El cumplimiento con los Requisitos Esenciales de Seguridad y Salud está basado en la conformidad a los siguientes documentos:

- Normas **EN 50014:1997 + A1:1999 + A2:1999**  
**EN 50018:2000 + A1:2002**  
**EN 50020:2002**

(10) Si el signo X aparece después del número de certificado indica que este material o sistema de protección está sometido a las condiciones especiales de utilización que figuran en el anexo del presente certificado.

(11) Este Certificado de Examen CE de Tipo se refiere únicamente al diseño y construcción del equipo o sistema de protección especificado, conforme a la Directiva 94/9/CE. Podrán ser aplicables exigencias suplementarias de esta Directiva para la fabricación y suministro de este equipo o sistema de protección. Éstas no están cubiertas por este certificado.

(12) El marcado del equipo o sistema de protección deberá incluir, entre otras indicaciones relevantes, lo siguiente:

 II 2G EEx d IIB T4..T6

 II 2(2) G EEx d [ib] IIB T6

 II 2(1) G EEx d [ia] IIB T6

 II 2(1/2) G EEx d [ia/ib] IIB T6

Ta: -20 °C / +55 °C

Carlos Fernández Ramón  
DIRECTOR DEL LABORATORIO



Madrid, 17 de junio de 2003

Angel Vega Remesal  
Responsable del área ATEX

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# LABORATORIO OFICIAL J. M. MADARIAGA

## (A1) SCHEDULE

(A2) EC-Type Examination Certificate: **LOM 03ATEX2046 X**

### (A3) Description of equipment or protective system

Boxes for electrical apparatus based on empty boxes with same denomination that include the same external accessories and having got the component certificate LOM 02ATEX3060U of Cooper, Crouse-Hinds Division, CEAG, C EAG Nortem, S.A..

Types and sizes are the same as indicated in the component certificate

These boxes can include the following electrical devices and apparatus:

- Bus bars
- Terminals
- Low voltage transformers
- Air circuit-breakers
- Automatic circuit-breakers
- Control and operation circuits
- Servomotors without ventilation
- Starters and ballasts for discharge lamps
- Electronic apparatus
- Associated intrinsic safety apparatus

Thermal class is determined according dissipated power (in W) inside the enclosure as show in following table:

| Type         | Ta: -20 / + 40 °C |     |     | Ta: -20 / + 55 °C |     |      |
|--------------|-------------------|-----|-----|-------------------|-----|------|
|              | T4                | T5  | T6  | T4                | T5  | T6   |
| EJB 12.      | 100               | 60  | 30  | 83                | 43  | 18   |
| EJB 14.      | 240               | 140 | 80  | 200               | 100 | 50   |
| EJB 23.      | 240               | 140 | 60  | 200               | 100 | 35   |
| EJB 110      | 295               | 170 | 125 | 245               | 120 | 75   |
| EJB 120      | 480               | 270 | 150 | 400               | 195 | 90   |
| EJB 121      | 500               | 280 | 150 | 415               | 200 | 90   |
| EJB 130      | 590               | 340 | 200 | 490               | 245 | 125  |
| EJB 131      | 610               | 350 | 200 | 505               | 250 | 125  |
| EJB 240/241. | 700               | 400 | 250 | 580               | 290 | 155  |
| EJW 250      | 560               | 340 | 250 | 465               | 250 | 155  |
| EJW 251      | 850               | 520 | 380 | 700               | 380 | 235  |
| EJW 350      | 850               | 520 | 380 | 700               | 380 | 235  |
| EJW 351      | 1000              | 600 | 450 | 840               | 450 | 280  |
| EJW 561      | 1000              | 730 | 600 | 400               | 600 | 1000 |

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# LABORATORIO OFICIAL J. M. MADARIAGA

## (A1) ANEXO

(A2) Certificado de Examen CE de Tipo: **LOM 03ATEX2046 X**

(A3) Descripción del equipo o sistema certificado

Cajas para aparamenta eléctrica basadas en las cajas vacías de la misma denominación, incluyendo accesorios externos, con certificado de componente LOM 02ATEX3060U.

Los tipos y tamaños son los recogidos en el certificado de componente.

Los elementos eléctricos que el fabricante puede incluir son los siguientes:

- Trenes de barras
- Bornes
- Transformadores de baja tensión
- Aparatos de corte al aire
- Interruptores automáticos
- Elementos de mando y control
- Motores con servomecanismo sin ventilación
- Equipos de encendido de lámparas de descarga
- Aparatos electrónicos
- Equipos asociados de seguridad intrínseca

La clase térmica está determinada según la potencia disipada (en W) en el interior de acuerdo a la siguiente tabla:

| Tipo         | Ta: -20 / + 40 °C |     |     | Ta: -20 / + 55 °C |     |      |
|--------------|-------------------|-----|-----|-------------------|-----|------|
|              | T4                | T5  | T6  | T4                | T5  | T6   |
| EJB 12.      | 100               | 60  | 30  | 83                | 43  | 18   |
| EJB 14.      | 240               | 140 | 80  | 200               | 100 | 50   |
| EJB 23.      | 240               | 140 | 60  | 200               | 100 | 35   |
| EJB 110      | 295               | 170 | 125 | 245               | 120 | 75   |
| EJB 120      | 480               | 270 | 150 | 400               | 195 | 90   |
| EJB 121      | 500               | 280 | 150 | 415               | 200 | 90   |
| EJB 130      | 590               | 340 | 200 | 490               | 245 | 125  |
| EJB 131      | 610               | 350 | 200 | 505               | 250 | 125  |
| EJB 240/241. | 700               | 400 | 250 | 580               | 290 | 155  |
| EJW 250      | 560               | 340 | 250 | 465               | 250 | 155  |
| EJW 251      | 850               | 520 | 380 | 700               | 380 | 235  |
| EJW 350      | 850               | 520 | 380 | 700               | 380 | 235  |
| EJW 351      | 1000              | 600 | 450 | 840               | 450 | 280  |
| EJW 561      | 1000              | 730 | 600 | 400               | 600 | 1000 |



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# LABORATORIO OFICIAL J. M. MADARIAGA

## (A1) SCHEDULE

(A2) EC-Type Examination Certificate: **LOM 03ATEX2046 X**

### (A3) Description of equipment or protective system (continue)

Enclosures can include commercial intrinsically safe associated apparatus based on 94/9/EC directive. Wiring and apparatus distribution is detailed in applicant descriptive documents. Ambient temperature will be  $T_a: -20^{\circ}\text{C} / +55^{\circ}\text{C}$ . This temperature will be restrained to standard range  $T_a: -20^{\circ}\text{C} / +40^{\circ}\text{C}$  when at least one apparatus is not foreseen for extended ambient temperature.

Enclosures that include electronic devices containing batteries of up to 1/100 of the free volume or capacitors will attach the label "DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT".

Enclosures that include capacitors will attach the label "DON NOT OPEN BEFORE  $xx$  s AFTER POWER OFF", where  $xx$  is the discharge time.

Electrical characteristics: Maximum voltage: 750 V Maximum current: 1200 A

### (A4) Test report nr: LOM 03.308 GP

### (A5) Special conditions for safe use

- This boxes require special quality fasteners.
- Glass windows are only valid for temperature class T5 and T6.
- The special conditions for safe use indicated in the certificates of intrinsically safe associated apparatus.
- The manufacturer will have to determine, when there are combined different circuits of intrinsic safety, the specific parameters of the type of protection as indicated in standards EN 50020 and EN 50039.
- Only there is allowed the incorporation of electrical equipment and intrinsic safety associate apparatus, and execution of the wired up boarder by the manufacturer.

### (A6) Individual tests

Each manufactured unit must be submitted to a static overpressure test after mechanising of holes for accessories and cable entries holes according 15.1.3.1 of EN 50018:2000. Test pressures will be:

1170 kPa in types EJB 12, 110, 120, 130 and 240

1280 kPa in types EJB 121, 131 and 241

1320 kPa in el types EJB 23

1440 kPa in el types EJB 14

1250 kPa in el types EJW...

### (A7) Essential Health and Safety Requirements

Explosion safe requirements are covered by application of the standards indicated in page 1/3 of this certificate and the specific conditions indicated in paragraph D.2.2 of EN 50018:2000 related to assembling electrical components inside enclosure.

### (A8) Descriptive documents:

|                                | Rev. | Date       |
|--------------------------------|------|------------|
| - Technical description        | 0    | 2003-05-30 |
| - Drawing nr. N1171112-0004.en | 0    | 2003-03-03 |
| N601114-0117                   | 0    | 2003-06-16 |

and the documents listed in component certificate LOM 02ATEX3060U given by the manufacturer of the component.



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# LABORATORIO OFICIAL J. M. MADARIAGA

## (A1) ANEXO

(A2) Certificado de Examen CE de Tipo: **LOM 03ATEX2046 X**

### (A3) Descripción del equipo o sistema certificado (continuación)

Las envolventes pueden incluir equipos asociados comerciales de seguridad intrínseca basados en la directiva 94/9/CE. La distribución de equipos y cableado se recoge en los documentos descriptivos. La temperatura ambiente Ta: -20 °C / +55 °C estará restringida al rango normal Ta: -20 °C / +40 °C cuando al menos un equipo no esté previsto para un rango extendido de temperatura.

Las envolventes que incluyan dispositivos electrónicos conteniendo baterías de hasta 1/100 del volumen libre o condensadores llevarán la etiqueta "NO ABRIR EN PRESENCIA DE UNA ATMÓSFERA EXPLOSIVA"

Las envolventes que incluyan condensadores llevarán la etiqueta "NO ABRIR ANTES DE PASADOS xx s DESPUÉS DE LA DESCONEXIÓN", siendo xx el tiempo de descarga.

Características eléctricas: Tensión máxima: 750 V Corriente máxima: 1200 A  
Corriente máxima en barras: 1200 A

### (A4) Protocolo de ensayos nº LOM 03.308 GP

#### (A5) Condiciones especiales para una utilización segura

- Las envolventes requieren tornillería de calidad especial
- Las mirillas de vidrio solo son aptas para clases de temperatura T5 y T6
- Las condiciones especiales para una utilización segura indicadas en los certificados de los equipos asociados de seguridad intrínseca
- El fabricante deberá determinar, cuando se combinen circuitos de seguridad intrínseca, los parámetros específicos del modo de protección tal como se indica en las normas EN 50020 y EN 50039.
- Solo está permitida la incorporación de equipos eléctricos y de seguridad intrínseca y realización de cableado por el fabricante del equipo.

#### (A6) Ensayos individuales

Cada unidad fabricada deberá ser sometida a una prueba de presión estática tras la mecanización de orificios para accesorios y entradas de cable de acuerdo al apartado 15.1.3.1 de EN 50018:2000. Las presiones de ensayo serán:

1170 kPa en los tipos EJB 12, 110, 120, 130 y 240

1280 kPa en los tipos EJB 121, 131 y 241

1320 kPa en el tipo EJB 23

1440 kPa en el tipo EJB 14

1250 kPa en los tipos EJW...

#### (A7) Requisitos esenciales de seguridad y salud

Los requisitos de seguridad frente a la explosión están cubiertos por aplicación de las normas que aparecen en la página 1/3 de este certificado y las condiciones específicas indicadas en el apartado D.2.2 de EN 50018:2000 relativas al montaje de equipos eléctricos en el interior de la envolvente.

#### (A8) Documentos descriptivos:

|                       | Rev. | Fecha      |
|-----------------------|------|------------|
| - Memoria descriptiva | 0    | 2003-05-30 |
| - Planos nº:          | 0    | 2003-03-03 |
| N601114-0118          | 0    | 2003-06-16 |

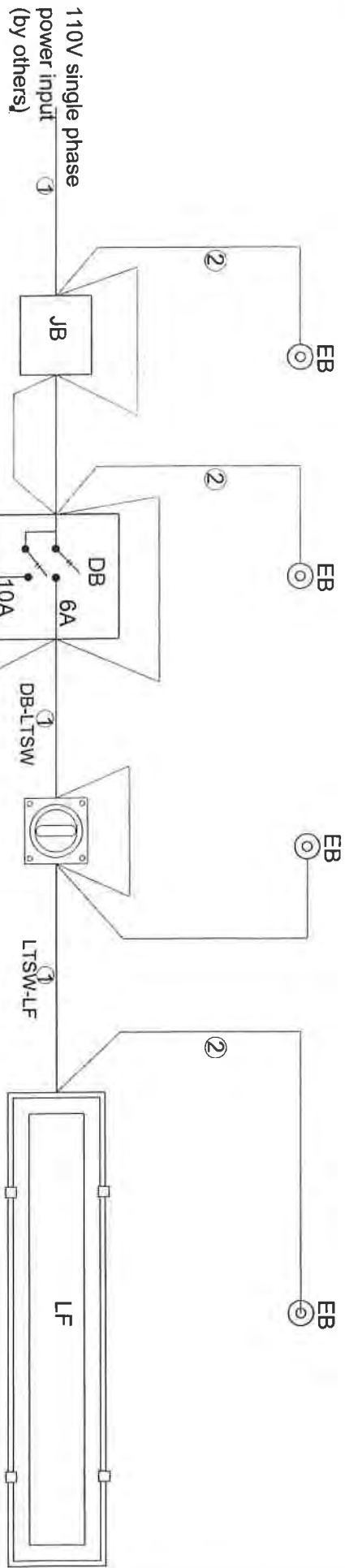
y los documentos indicados en el certificado de componente LOM 02ATEX3060U proporcionados por el fabricante del componente.

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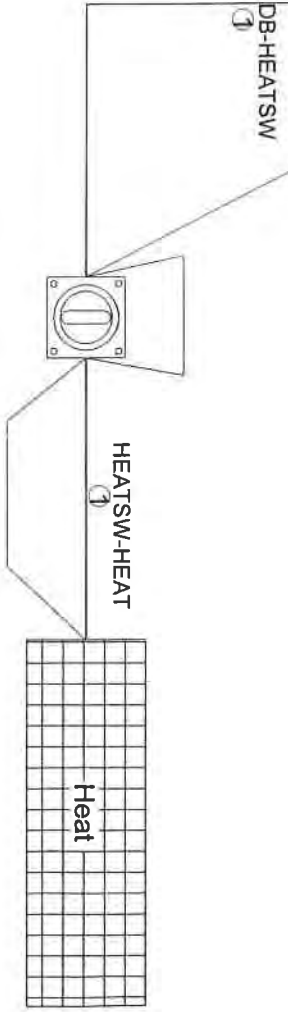


# Electrical Drawing

| REVISION HISTORY |    |             |          |      |      |                 |
|------------------|----|-------------|----------|------|------|-----------------|
| REV              | BY | DESCRIPTION | DATE     | CHKD | APPR | EXT AP / CL APP |
| 1                | ih | -           | 04.05.17 |      |      | n/a             |



| Item               | Description                           | Qty |
|--------------------|---------------------------------------|-----|
| E                  | Earth                                 | 1   |
| JB                 | Hawke PL612 Junction Box              | 1   |
| DB                 | Distribution Board                    | 1   |
| SW                 | Double Pole Switch                    | 2   |
| LF                 | 4ft Triw. Fluorescent Light           | 1   |
| Soc                | Socket                                | 1   |
| Cable Types BS6883 |                                       |     |
| Item               | Description                           |     |
| 1                  | 3 x 2.5mm (tcu/ep/ sw4/gswb/sw4) RFOU |     |
| 2                  | 6mm 1c ru                             |     |



Checked by: *[Signature]*  
 Approved by: *[Signature]*  
 Date: 4/5/17

|                                             |           |                                                                                                                                                                       |          |                                                                                             |  |
|---------------------------------------------|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|---------------------------------------------------------------------------------------------|--|
| Description:<br><b>Container Schematics</b> |           | General tolerances UNO<br>Steel fabrication: $\pm 3.00\text{mm}$<br>Machining: $\pm 0.25\text{mm}$<br>Concentric: $\pm 0.05\text{mm}$<br>Angular: $\pm 30\text{mins}$ |          | Matched corner radii<br>Inside: $\pm 0.50\text{mm}$ UNO<br>Outside: $\pm 0.05\text{mm}$ UNO |  |
| Part no:                                    | EL-0152   | Drawing No:                                                                                                                                                           | BMD-1662 | Third Angle Projection                                                                      |  |
| Client:                                     | BlueManta | Scale:                                                                                                                                                                | nts@a4   |                                                                                             |  |