

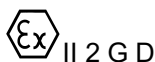


EC Type Examination Certificate CML 15ATEX1133X Issue 0

- 1 Equipment intended for use in Potentially Explosive Atmospheres Directive 94/9/EC
- 2 Equipment **Type TX4714 Slip Ring Unit**
- 3 Manufacturer **T.E.L. Engineering Limited (Trading as Trolex Engineering)**
- 4 Address Newby Road
 Hazel Grove
 Stockport
 SK7 5DA
 UK
- 5 The equipment is specified in the description of this certificate and the documents to which it refers.
- 6 Certification Management Limited, Unit 1 Newport Business Park, New Port Road, Ellesmere Port CH65 4LZ, UK, Notified Body Number 2503, in accordance with Article 9 of Directive 94/9/EC, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the confidential reports listed in Section 12.
- 7 If an 'X' suffix appears after the certificate number, it indicates that the equipment is subject to conditions of safe use (affecting correct installation or safe use). These are specified in Section 14.
- 8 This EC Type Examination certificate relates only to the design and construction of the specified equipment or component. Further requirements of Directive 94/9/EC Article 8 apply to the manufacture of the equipment or component and are separately certified.
- 9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the confidential report, has been demonstrated through compliance with the following documents:

EN 60079-0:2012 EN 60079-1:2014
EN 60079-7:2007 EN 60079-31:2014
- 10 The equipment shall be marked with the following:



Ex db eb IIB T6 Gb

Ex tb IIIC T85°C Db

Ta= -20°C to +45°C, or, -40°C to +55°C

M D Shearman FlnstMC
Managing Director



11 Description

The Type TX4714 Slip Ring Unit comprises a fabricated mild steel or stainless steel flameproof enclosure, incorporating slip rings and associated brush gear. The flameproof enclosure is stationary when installed and has a flange or foot at one end for mounting the enclosure. There is an increased safety terminal compartment mounted to the side of the stationary flameproof enclosure, and housing increased safety terminals.

There is a shaft through the centre of the flameproof enclosure which rotates on rolling element bearings. A second increased safety terminal enclosure, housing increased safety terminals, is mounted to the top of the shaft, allowing it to rotate in relation to the flameproof enclosure.

Electrical connections are made between the flameproof enclosure and the two increased safety enclosures via certified flameproof cable glands.

The maximum supply voltage of the equipment is 1000 V. The internal slip rings are individually rated up to 100 A, and may be used for power, signal and intrinsically safe circuits. The maximum total throughput current is 400 Amps plus earths, screens and Neutral.

12 Certificate history and evaluation reports

Issue	Date	Associated report	Notes
0	05 Feb 2016	R759A/00	Report for the prime certificate issue for the TX4714

Note: Drawings that describe the equipment or component are listed in the Annex.

13 Conditions of manufacture

The following conditions are required of the manufacturing process for compliance with the certification.

- 13.1 The flameproof compartment of each unit shall be subjected to a routine overpressure test in accordance with EN 60079-1:2014, clause 16. A pressure of 12 bar shall be applied for a period of at least 10 seconds. There shall be no permanent deformation or damage to the enclosure or leakage via the enclosure walls or any welded joints.
- 13.2 The increased safety compartments of each unit shall be subjected to routine dielectric strength testing in accordance with EN 60079-7:2007, clause 7.1. A test voltage of 3000 V r.m.s. shall be applied for 1 minute. Alternatively, a test voltage of 3600 V r.m.s. shall be maintained for 100 ms. No dielectric breakdown or flashover shall occur.
- 13.3 The equipment covered by this certificate includes previously certified devices. It is the manufacturer's responsibility to continually monitor the status of these certified devices. These devices shall be installed in accordance with their certificates and instructions. The manufacturer shall also inform Certification Management Limited of any changes to these devices that may impact upon the explosion safety aspects of their equipment. A copy of the appropriate certification documentation for these devices shall be provided to the end user.



- 13.4 Regarding the threaded holes between the flameproof and increased safety compartments; these shall be fitted with ATEX approved cable glands, certified Ex db IIB Gb and be suitable for the following service temperature range:

Marked ambient on equipment	Service temperature range of glands
-40°C to +55°C	-40°C to +74°C
-20°C to +45°C	-20°C to +64°C

These shall be installed in accordance with their ATEX certificate, their instruction manual, and with EN 60079-14. A suitable cable shall be selected. Any unused threaded holes shall be fitted with stopping plugs which meet the above installation and certification requirements.

The cable entries into the increased safety compartment may also occasionally be fitted with cable glands and cable by the manufacturer. In these cases, these cable glands shall be certified Ex e II Gb and Ex tb IIIC Db, and also be selected and installed in accordance with the above requirements.

14 Special Conditions for Safe Use (Conditions of Certification)

The following conditions relate to safe installation and/or use of the equipment.

- 14.1 External cable glands installed into threaded entries on the increased safety enclosures shall be fitted with their associated gasket/sealing ring at the enclosure interface. The cable glands shall be ATEX certified Ex eb IIC Gb and Ex tb IIIC Db and capable of maintaining an IP rating of at least IP64 when the gaskets/seals are installed.



Certificate Annex

Certificate Number CML 15ATEX1133X
Equipment Type TX4714 Slip Ring Unit
Manufacturer T.E.L. Engineering Limited (Trading as Trolex Engineering)

The following documents describe the equipment or component defined in this certificate:

Issue 0

Drawing No	Sheets	Rev	Approved date	Title
4714/3/466/631	1 of 1	B	05 Feb 2016	Approval drawing
4714/1/466/315	1 to 4	B	05 Feb 2016	Approval General Arrangement/Certification G. A.
1/4714/100	1 of 1	B	05 Feb 2016	Approval drawing
4714/1/466/412	1 to 3	B	05 Feb 2016	Approval drawing/Certification G. A.
1/4714/101	1 of 1	A	05 Feb 2016	Approval G.A.




EU Type Examination Certificate CML 15ATEX1133X Issue 1

- 1 Equipment intended for use in Potentially Explosive Atmospheres Directive 94/9/EC
- 2 Equipment **Type TX4714 Slip Ring Unit**
- 3 Manufacturer **T.E.L. Engineering Limited (Trading as Trolex Engineering)**
- 4 Address Unit 2 Levens Road
Newby Road Industrial Estate
Hazel Grove
Stockport
Cheshire
SK7 5DL
UK
- 5 The equipment is specified in the description of this certificate and the documents to which it refers.
- 6 Certification Management Limited, Unit 1 Newport Business Park, New Port Road, Ellesmere Port CH65 4LZ, UK, Notified Body Number 2503, in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the confidential reports listed in Section 12.
- 7 If an 'X' suffix appears after the certificate number, it indicates that the equipment is subject to conditions of safe use (affecting correct installation or safe use). These are specified in Section 14.
- 8 This EC Type Examination certificate relates only to the design and construction of the specified equipment or component. Further requirements of Directive 2014/34/EU Article 13 apply to the manufacture of the equipment or component and are separately certified.
- 9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the confidential report, has been demonstrated through compliance with the following documents:

EN 60079-0:2012	EN 60079-1:2014
EN 60079-7:2007	EN 60079-31:2014
- 10 The equipment shall be marked with the following:

 II 2 G D
Ex db eb IIB T6 Gb
Ex tb IIIC T85°C Db
Ta= -20°C to +45°C, or, -40°C to +55°C

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11 Description

The Type TX4714 Slip Ring Unit comprises a fabricated mild steel or stainless steel flameproof enclosure, incorporating slip rings and associated brush gear. The flameproof enclosure is stationary when installed and has a flange or foot at one end for mounting the enclosure. There is an increased safety terminal compartment mounted to the side of the stationary flameproof enclosure, and housing increased safety terminals.

There is a shaft through the centre of the flameproof enclosure which rotates on rolling element bearings. A second increased safety terminal enclosure, housing increased safety terminals, is mounted to the top of the shaft, allowing it to rotate in relation to the flameproof enclosure.

Electrical connections are made between the flameproof enclosure and the two increased safety enclosures via certified flameproof cable glands.

The maximum supply voltage of the equipment is 1000 V. The internal slip rings are individually rated up to 100 A, and may be used for power, signal and intrinsically safe circuits. The maximum total throughput current is 400 Amps plus earths, screens and Neutral.

Variation 1

Variation 1 introduces the following modifications:

- i. Update of the manufacturer's address.
- ii. Update to the latest edition of the ATEX directive.

12 Certificate history and evaluation reports

Issue	Date	Associated report	Notes
0	05 Feb 2016	R759A/00	Report for the prime certificate issue for the TX4714
1	25 Jul 2018	R11317A/00	Introduction of Variation 1

Note: Drawings that describe the equipment or component are listed in the Annex.

13 Conditions of manufacture

The following conditions are required of the manufacturing process for compliance with the certification.

- 13.1 The flameproof compartment of each unit shall be subjected to a routine overpressure test in accordance with EN 60079-1:2014, clause 16. A pressure of 12 bar shall be applied for a period of at least 10 seconds. There shall be no permanent deformation or damage to the enclosure or leakage via the enclosure walls or any welded joints.
- 13.2 The increased safety compartments of each unit shall be subjected to routine dielectric strength testing in accordance with EN 60079-7:2007, clause 7.1. A test voltage of 3000 V r.m.s. shall be applied for 1 minute. Alternatively, a test voltage of 3600 V r.m.s. shall be maintained for 100 ms. No dielectric breakdown or flashover shall occur.



- 13.3 The equipment covered by this certificate includes previously certified devices. It is the manufacturer's responsibility to continually monitor the status of these certified devices. These devices shall be installed in accordance with their certificates and instructions. The manufacturer shall also inform Certification Management Limited of any changes to these devices that may impact upon the explosion safety aspects of their equipment. A copy of the appropriate certification documentation for these devices shall be provided to the end user.
- 13.4 Regarding the threaded holes between the flameproof and increased safety compartments; these shall be fitted with ATEX approved cable glands, certified Ex db IIB Gb and be suitable for the following service temperature range:

Marked ambient on equipment	Service temperature range of glands
-40°C to +55°C	-40°C to +74°C
-20°C to +45°C	-20°C to +64°C

These shall be installed in accordance with their ATEX certificate, their instruction manual, and with EN 60079-14. A suitable cable shall be selected. Any unused threaded holes shall be fitted with stopping plugs which meet the above installation and certification requirements.

The cable entries into the increased safety compartment may also occasionally be fitted with cable glands and cable by the manufacturer. In these cases, these cable glands shall be certified Ex e II Gb and Ex tb IIIC Db, and also be selected and installed in accordance with the above requirements.

14 Special Conditions for Safe Use (Conditions of Certification)

The following conditions relate to safe installation and/or use of the equipment.

- 14.1 External cable glands installed into threaded entries on the increased safety enclosures shall be fitted with their associated gasket/sealing ring at the enclosure interface. The cable glands shall be ATEX certified Ex eb IIC Gb and Ex tb IIIC Db and capable of maintaining an IP rating of at least IP64 when the gaskets/seals are installed.



Certificate Annex

Certificate Number CML 15ATEX1133X
Equipment Type TX4714 Slip Ring Unit
Manufacturer T.E.L. Engineering Limited (Trading as Trolex Engineering)

The following documents describe the equipment or component defined in this certificate:

Issue 0

Drawing No	Sheets	Rev	Approved date	Title
4714/3/466/631	1 of 1	B	05 Feb 2016	Approval drawing
4714/1/466/315	1 to 4	B	05 Feb 2016	Approval General Arrangement/Certification G. A.
1/4714/100	1 of 1	B	05 Feb 2016	Approval drawing
4714/1/466/412	1 to 3	B	05 Feb 2016	Approval drawing/Certification G. A.
1/4714/101	1 of 1	A	05 Feb 2016	Approval G.A.

Issue 1

Drawing No	Sheets	Rev	Approved date	Title
4714/3/466/631	1 of 1	C	25 Jul 2018	Approval Drawing (label)



UNCONTROLLED DOCUMENT
THIS DOCUMENT IS NOT
SUBJECT TO AMENDMENTS

T.E.L. ENGINEERING LIMITED

EU Type Examination Certificate CML 15ATEX1133X Issue 2

- 1 Equipment intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU
- 2 Equipment **Type TX4714 Slip Ring Unit**
- 3 Manufacturer **T.E.L. Engineering Limited (Trading as Trolex Engineering)**
- 4 Address **Unit 2 Levens Road
Newby Road Industrial Estate
Hazel Grove, Stockport
Cheshire, SK7 5DL
UK**
- 5 The equipment is specified in the description of this certificate and the documents to which it refers.
- 6 CML B.V., Chamber of Commerce No 6738671, Koopvaardijweg 32, 4906CV Oosterhout, The Netherlands, Notified Body Number 2776, in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.
The examination and test results are recorded in the confidential reports listed in Section 12.
- 7 If an 'X' suffix appears after the certificate number, it indicates that the equipment is subject to conditions of safe use (affecting correct installation or safe use). These are specified in Section 14.
- 8 This EU Type Examination certificate relates only to the design and construction of the specified equipment or component. Further requirements of Directive 2014/34/EU Article 13 apply to the manufacture of the equipment or component and are separately certified.
- 9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the confidential report, has been demonstrated through compliance with the following documents:

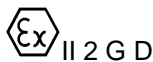
EN IEC 60079-0:2018

EN 60079-1:2014

EN 60079-7:2015+A1:2018

EN 60079-31:2014

- 10 The equipment shall be marked with the following:



Ex db eb IIB T6 Gb

Ex tb IIIC T85°C Db

Ta=-20°C to +45°C, or -40°C to +55°C





11 Description

The Type TX4714 Slip Ring Unit comprises a fabricated mild steel or stainless steel flameproof enclosure, incorporating slip rings and associated brush gear. The flameproof enclosure is stationary when installed and has a flange or foot at one end for mounting the enclosure. There is an increased safety terminal compartment mounted to the side of the stationary flameproof enclosure, and housing increased safety terminals.

There is a shaft through the centre of the flameproof enclosure which rotates on rolling element bearings. A second increased safety terminal enclosure, housing increased safety terminals, is mounted to the top of the shaft, allowing it to rotate in relation to the flameproof enclosure.

Electrical connections are made between the flameproof enclosure and the two increased safety enclosures via certified flameproof cable glands.

The maximum supply voltage of the equipment is 1000 V. The internal slip rings are individually rated up to 100 A, and may be used for power, signal and intrinsically safe circuits. The maximum total throughput current is 400 Amps plus earths, screens and Neutral.

Variation 1

This variation introduces the following modifications:

- i. Update of the manufacturer's address.
- ii. Update to the latest edition of the ATEX directive.

Variation 2

This variation introduces the following modifications:

- i. Updating EN 60079-0:2012 and IECEx 60079-0:2011 Ed 6 to EN IEC 60079-0:2018 and IEC 60079-0:2017 Ed 7
- ii. Updating EN 60079-7:2007 to EN IEC 60079-7:2015+A1:2018 and IEC 60079-7:2015 Ed 5 to IEC 60079-7:2017 Ed 5.1

12 Certificate history and evaluation reports

Issue	Date	Associated report	Notes
0	05 Feb 2016	R759A/00	Report for the prime certificate issue for the TX4714
1	25 Jul 2018	R11317A/00	Introduction of Variation 1
2	05 May 2022	R15325C/00	Introduction of Variation 2

Note: Drawings that describe the equipment or component are listed in the Annex.



13 Conditions of Manufacture

The following conditions are required of the manufacturing process for compliance with the certification.

- i. The flameproof compartment of each unit shall be subjected to a routine overpressure test in accordance with EN 60079-1:2014, clause 16. A pressure of 12 bar shall be applied for a period of at least 10 seconds. There shall be no permanent deformation or damage to the enclosure or leakage via the enclosure walls or any welded joints.
- ii. The increased safety compartments of each unit shall be subjected to routine dielectric strength testing in accordance with EN 60079-7:2007, clause 7.1. A test voltage of 3000 V r.m.s. shall be applied for 1 minute. Alternatively, a test voltage of 3600 V r.m.s. shall be maintained for 100 ms. No dielectric breakdown or flashover shall occur.
- iii. The equipment covered by this certificate includes previously certified devices. It is the manufacturer's responsibility to continually monitor the status of these certified devices. These devices shall be installed in accordance with their certificates and instructions. The manufacturer shall also inform Certification Management Limited of any changes to these devices that may impact upon the explosion safety aspects of their equipment. A copy of the appropriate certification documentation for these devices shall be provided to the end user.
- iv. Regarding the threaded holes between the flameproof and increased safety compartments; these shall be fitted with ATEX approved cable glands, certified Ex db IIB Gb and be suitable for the following service temperature range:

Marked ambient on equipment	Service temperature range of glands
-40°C to +55°C	-40°C to +74°C
-20°C to +45°C	-20°C to +64°C

These shall be installed in accordance with their ATEX certificate, their instruction manual, and with EN 60079-14. A suitable cable shall be selected. Any unused threaded holes shall be fitted with stopping plugs which meet the above installation and certification requirements.

The cable entries into the increased safety compartment may also occasionally be fitted with cable glands and cable by the manufacturer. In these cases, these cable glands shall be certified Ex e II Gb and Ex tb IIIC Db, and also be selected and installed in accordance with the above requirements.

14 Specific Conditions of Use

The following conditions relate to safe installation and/or use of the equipment.

- i. External cable glands installed into threaded entries on the increased safety enclosures shall be fitted with their associated gasket/sealing ring at the enclosure interface. The cable glands shall be ATEX certified Ex eb IIC Gb and Ex tb IIIC Db and capable of maintaining an IP rating of at least IP64 when the gaskets/seals are installed.



Certificate Annex

Certificate Number CML 15ATEX1133X
Equipment Type TX4714 Slip Ring Unit
Manufacturer T.E.L. Engineering Limited (Trading as Trolex Engineering)

The following documents describe the equipment or component defined in this certificate:

Issue 0

Drawing No	Sheets	Rev	Approved date	Title
4714/3/466/631	1 of 1	B	05 Feb 2016	Approval drawing
4714/1/466/315	1 to 4	B	05 Feb 2016	Approval General Arrangement/Certification G. A.
1/4714/100	1 of 1	B	05 Feb 2016	Approval drawing
4714/1/466/412	1 to 3	B	05 Feb 2016	Approval drawing/Certification G. A.
1/4714/101	1 of 1	A	05 Feb 2016	Approval G.A.

Issue 1

Drawing No	Sheets	Rev	Approved date	Title
4714/3/466/631	1 of 1	C	25 Jul 2018	Approval Drawing (label)

Issue 2

None.