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20/12/2024

EU Type Examination Certificate CML 15ATEX1143X Issue 5

- 1 Equipment intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU
- 2 Equipment **TX3706 Falcon 25 Series Connector**
- 3 Manufacturer **Trolex Ltd** **PEI-Genesis**
- 4 Address **Newby Road** **George Curl Way**
Hazel Grove **Southampton**
Stockport, Cheshire **Hampshire**
SK7 5DY **SO18 2RZ**
United Kingdom **United Kingdom**
- 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, Hoogoorddreef 15, Amsterdam, 1101 BA, 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 60079-0:2012+A11:2013 EN 60079-1:2014 EN 60079-7:2015
EN 60079-28:2015 EN 60079-31:2014

- 10 The equipment shall be marked with the following:

Non-optical marking



I M2

Ex db eb I Mb

Ex db I Mb



II 2 G D

Ex db eb IIC T4 Gb

Ex db IIC T4 Gb

Ex tb IIIC T135°C Db

Ta= -50°C to +60°C

Optical marking – Refer to Section 11

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11 Description

The TX3706 Falcon 25 Series connectors are a range of plug and socket arrangements that consist of the following options:

- TX3706.1 – Falcon 25 Line Plug
- TX3706.2 – Falcon 25 Line Receptacle
- TX3706.3 – Falcon 25 Fixed Receptacle
- TX3706.4 – Falcon 25 Flash
- TX3706.6 – Falcon 25 Fibre Line Plug
- TX3706.7 – Falcon 25 Fibre Line Receptacle
- TX3706.8 – Falcon 25 Fibre Fixed Receptacle
- TX3706.(41, 42, 43, 44) – Ex d Metallic Cap
- TX3706.9 – Falcon 25 Hybrid Line Plug
- TX3706.10 – Falcon 25 Hybrid Line Receptacle
- TX3706.11 – Falcon 25 Hybrid Fixed Receptacle

Internally the TX3706 Falcon 25 Series Connectors can contain pin and socket inserts (4 to 10 way), USB flash drive connections, and fibre optic connections. They can also be fitted with nylon insulators. The connectors also allow the connection of cables via separately certified cable glands. In the case of the fixed receptacles, a potted cable entry is incorporated.

The enclosures contain ingress protection seals at the base of the Line Plugs, around the bayonet and bayonet track (full engagement – rated IP66) which is an extension of the housing which contains an inner insulator tube with further connection to an internal earth connection. The end caps have threaded cable entries (where used) and incorporate an internal earth connection. Two cable entry sizes are available; M20 x 1.5 and M25 x 1.5 and the end cap is secured in place by two screws.

All securing screws are M4 x 16 long socket cap head screws, stainless steel Grade A2-70 with hex socket cap heads in accordance with ISO4762.

The connectors further utilise an interlocking mechanism to create a flameproof enclosure during disconnection of the pins and sockets. During disconnection, connectors also incorporate the use of rubber cover end caps on the sockets and plugs to help protect the enclosures from ingress of dust and moisture to provide an IP65 rating.



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When the TX3706 Falcon 25 Fibre connectors are used, the following limits apply:

Underground Mines

Free Plug and Free Receptacle

Product Code:	Ex Certification Code:	Optical radiated power limit:
TX3706.6.19 TX3706.7.19	I M1 Ex op is I Ma -50 °C ≤ Ta ≤ +60 °C	≤ 150 mW
	I M2 Ex db op is I Mb -50 °C ≤ Ta ≤ +60 °C	≤ 150 mW
	I M2 Ex db op pr I Mb -50 °C ≤ Ta ≤ +60 °C	≤ 4 W

Product Code:	Ex Certification Code:	Optical radiated power limit:	Electrical Contacts Rating:
TX3706.9.19 TX3706.10.19	I M2 Ex db op is I Mb -50 °C ≤ Ta ≤ +60 °C	≤ 150 mW	Contact rating: 12.5 A, 250 VAC / 100 VDC Max. total current (all contacts): 50 A
	I M2 Ex db op pr I Mb -50 °C ≤ Ta ≤ +60 °C	≤ 4 W	

Fixed Receptacle (low risk of mechanical danger only)

Product Code:	Ex Certification Code:	Optical radiated power limit:
TX3706.8.19	I M1 Ex op is I Ma -50 °C ≤ Ta ≤ +60 °C	≤ 150 mW
	I M2 Ex db op is I Mb -50 °C ≤ Ta ≤ +60 °C	≤ 150 mW
	I M2 Ex eb op is I Mb -50 °C ≤ Ta ≤ +60 °C	≤ 150 mW
	I M2 Ex db op pr I Mb -50 °C ≤ Ta ≤ +60 °C	≤ 4 W
	I M2 Ex db eb op pr I Mb -50 °C ≤ Ta ≤ +60 °C	≤ 4 W



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Product Code:	Ex Certification Code:	Optical radiated power limit:	Electrical Contacts Rating:
TX3706.11.19	I M2 Ex db op is I Mb -50 °C ≤ Ta ≤ +60 °C	≤ 150 mW	Contact rating: 12.5 A, 250 VAC / 100 VDC Max. total current (all contacts): 50 A
	I M2 Ex db op pr I Mb -50 °C ≤ Ta ≤ +60 °C	≤ 4 W	
	I M2 Ex db eb op pr I Mb -50 °C ≤ Ta ≤ +60 °C	≤ 4 W	

Surface industry with explosive gas and dust atmospheres

Free Plug and Free Receptacle

Product Code:	Ex Certification Code:	Optical radiated power limit:
TX3706.6.20 TX3706.7.20	II 1GD Ex op is IIC T6 Ga -50 °C ≤ Ta ≤ +60 °C	≤ 15 mW
	II 1GD Ex op is IIC T4 Ga -50 °C ≤ Ta ≤ +60 °C	≤ 35 mW
	II 1GD Ex op is IIB T6 Ga -50 °C ≤ Ta ≤ +60 °C	≤ 35 mW
	II 1GD Ex op is IIA T3 Ga -50 °C ≤ Ta ≤ +60 °C	≤ 150 mW
	II 1GD Ex op is IIIC T135°C Da -50 °C ≤ Ta ≤ +60 °C	≤ 35 mW
	II 2GD Ex db op is IIC T6 Gb -50 °C ≤ Ta ≤ +60 °C	≤ 15 mW
	II 2GD Ex db op is IIC T4 Gb -50 °C ≤ Ta ≤ +60 °C	≤ 35 mW
	II 2GD Ex db op is IIB T6 Gb -50 °C ≤ Ta ≤ +60 °C	≤ 35 mW



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	II 2GD Ex db op is IIA T3 Gb -50 °C ≤ Ta ≤ +60 °C	≤ 150 mW
	II 2GD Ex db op pr IIC T4 Gb -50 °C ≤ Ta ≤ +60 °C	≤ 4 W
	II 2GD Ex tb op is IIIC T135°C Db -50 °C ≤ Ta ≤ +60 °C	≤ 35 mW
	II 2GD Ex tb op pr IIIC T135°C Db -50 °C ≤ Ta ≤ +60 °C	≤ 4 W

Product Code:	Ex Certification Code:	Optical radiated power limit:	Electrical Contacts Rating:
TX3706.9.20 TX3706.10.20	II 2GD Ex db op is IIC T4 Gb -50 °C ≤ Ta ≤ +60 °C	≤ 35 mW	Contact rating: 12.5 A, 250 VAC / 100 VDC Max. total current (all contacts): 50 A

Fixed Receptacle

Product Code:	Ex Certification Code:	Optical radiated power limit:
TX3706.8.20	II 1GD Ex op is IIC T6 Ga -50 °C ≤ Ta ≤ +60 °C	≤ 15 mW
	II 1GD Ex op is IIC T4 Ga -50 °C ≤ Ta ≤ +60 °C	≤ 35 mW
	II 1GD Ex op is IIB T6 Ga -50 °C ≤ Ta ≤ +60 °C	≤ 35 mW
	II 1GD Ex op is IIA T3 Ga -50 °C ≤ Ta ≤ +60 °C	≤ 150 mW
	II 1GD Ex op is IIIC T135°C Da -50 °C ≤ Ta ≤ +60 °C	≤ 35 mW



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Product Code:	Ex Certification Code:	Optical radiated power limit:
	II 2GD Ex db op is IIC T6 Gb -50 °C ≤ Ta ≤ +60 °C	≤ 15 mW
	II 2GD Ex eb op is IIC T6 Gb -50 °C ≤ Ta ≤ +60 °C	≤ 15 mW
	II 2GD Ex db op is IIC T4 Gb -50 °C ≤ Ta ≤ +60 °C	≤ 35 mW
	II 2GD Ex eb op is IIC T4 Gb -50 °C ≤ Ta ≤ +60 °C	≤ 35 mW
	II 2GD Ex db op is IIB T6 Gb -50 °C ≤ Ta ≤ +60 °C	≤ 35 mW
	II 2GD Ex eb op is IIB T6 Gb -50 °C ≤ Ta ≤ +60 °C	≤ 35 mW
	II 2GD Ex db op is IIA T3 Gb -50 °C ≤ Ta ≤ +60 °C	≤ 150 mW
	II 2GD Ex eb op is IIA T3 Gb -50 °C ≤ Ta ≤ +60 °C	≤ 150 mW
	II 2GD Ex db op pr IIC T4 Gb -50 °C ≤ Ta ≤ +60 °C	≤ 4 W
	II 2GD Ex db eb op pr IIC T4 Gb -50 °C ≤ Ta ≤ +60 °C	≤ 4 W
	II 2GD Ex tb op is IIIC T135°C Db -50 °C ≤ Ta ≤ +60 °C	≤ 35 mW
	II 2GD Ex tb op pr IIIC T135°C Db -50 °C ≤ Ta ≤ +60 °C	≤ 4 W



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Product Code:	Ex Certification Code:	Optical radiated power limit:	Electrical Contacts Rating:
TX3706.11.20	II 2GD Ex db op is IIC T4 Gb -50 °C ≤ Ta ≤ +60 °C	≤ 35 mW	Contact rating: 12.5 A, 250 VAC / 100 VDC Max. total current (all contacts): 50 A
	II 2GD Ex db op pr IIC T4 Gb -50 °C ≤ Ta ≤ +60 °C	≤ 4 W	
	II 2GD Ex db eb op pr IIC T4 Gb -50 °C ≤ Ta ≤ +60 °C	≤ 4 W	
	II 2GD Ex tb op is IIIC T135°C Db -50 °C ≤ Ta ≤ +60 °C	≤ 35 mW	
	II 2GD Ex tb op pr IIIC T135°C Db -50 °C ≤ Ta ≤ +60 °C	≤ 4 W	

Variation 1

This variation introduces the following modifications:

- i. To allow the use of Ex d cap covers when the connector is separated.

Variation 2

This variation introduces the following modifications:

- i. Addition of the potted fixed receptacle (TX3706.3) to the certification.
- ii. Addition of the flash drive connector (TX3706.4) to the certification.
- iii. The approval standards, description and the Conditions of Certification/Safe Use have been modified as a result of the above modifications.
- iv. To update the certificate reference to the 2014/34/EU Directive.
- v. To include an additional manufacturer and manufacturing location

Variation 3

This variation introduces the following modifications:

- i. To permit the change of the overall series name from TX3706 Falcon Series to TX3706 Falcon 25 Series Connector.
- ii. To permit the introduction of the TX3706 Falcon 25 Fibre, the product marking and description is amended accordingly.
- iii. To permit the inclusion of optional chamfered locking.
- iv. To permit the inclusion of additional material options for the IP dependant O-rings.
- v. To amend an existing condition of certification.



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- vi. To recognise the expansion of the range included in the certification, as a result of the above modifications, to the following:
 - TX3706.1 – Falcon 25 Line Plug
 - TX3706.2 – Falcon 25 Line Receptacle
 - TX3706.3 – Falcon 25 Fixed Receptacle
 - TX3706.4 – Falcon 25 Flash
 - TX3706.6 – Falcon 25 Fibre Line Plug
 - TX3706.7 – Falcon 25 Fibre Line Receptacle
 - TX3706.8 – Falcon 25 Fibre Fixed Receptacle
 - TX3706.(41, 42, 43, 44) – Ex d Metallic Cap

Variation 4

This variation introduces the following modifications:

- i. To amend existing Conditions of Manufacture and Special Conditions for Safe Use.
- ii. To increase the maximum flamepath gap to 0.1 mm. A Special Condition for Safe Use relating to the flamepath dimensions has been removed as it is no longer required.
- iii. To change the pin configuration from '4 or 10' pins to '4 to 10' pins

Variation 5

This variation introduces the following modifications:

- i. The inclusion of the Falcon 25 hybrid range with new part numbers and a new description. The new part numbers are:
 - TX3706.9 – Falcon 25 Hybrid Line Plug
 - TX3706.10 – Falcon 25 Hybrid Line Receptacle
 - TX3706.11 – Falcon 25 Hybrid Fixed Receptacle
- ii. Re-addition of an alternate manufacturing location.
- iii. Transfer of ATEX Certificate to a CML BV ATEX Certificate.
- iv. Amendment of the existing Special Conditions for Safe Use/Specific Conditions of Use and addition of a new one.

12 Certificate history and evaluation reports

Issue	Date	Associated report	Notes
0	11 Dec 2015	R559A/00	Issue of prime certificate
1	15 Feb 2016	R1003A/00	Introduction of Variation 1
2	04 Aug 2016	R1006A/00	Introduction of Variation 2
3	22 Jun 2017	R1777A/00	Introduction of Variation 3
4	06 Feb 2018	R11409A/00	Introduction of Variation 4
5	06 Dec 2018	R12032A/00	Introduction of Variation 5

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



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13 Conditions of Manufacture

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

- i. When aluminium is utilised as the material of manufacture of the enclosure, the equipment shall be marked for Group II and III applications only.
- ii. The fixed receptacle shall be subjected to a routine electric strength test in accordance with EN 60079-7:2015 clause 7.1 following installation of the cable and application of the potting compound.

14 Specific Conditions of Use (Special Conditions)

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

- i. For the full electrical versions, the total capacity of all pin options shall not exceed 100 A, with a maximum rating per pin of 25 A.
- ii. The cable entries and cable used with the TX3706 Falcon 25 Connectors may reach 60°C above ambient temperatures, therefore, shall be selected accordingly for these temperatures.
- iii. The connector arrangement remains flameproof through the first stage of disconnection which fully disconnects the pins, however, this only applies to circuits with a power factor of between 0.6 and 1.0. For circuits outside this range, unless for resistive loads only, additional time delays shall be considered before fully disconnecting the connector even when de-energised.
- iv. The stainless steel fixed receptacle, when used in Group I areas, shall only be used in areas considered to be low risk of mechanical danger or shall be additionally protected from mechanical impact by installation.
- v. The optical source shall be assessed for suitability of use with the TX3706 Falcon 25 Fibre Connectors. The optical power limits shall not exceed the values shown in the description.
- vi. For the optical versions, live disconnection is only permitted when used with an "op is" optical source.
- vii. For the Falcon 25 Hybrid Versions, the total current rating shall not exceed 50 A, with a maximum rating per pin of 12.5 A.

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Certificate Annex

Certificate Number CML 15ATEX1143X
Equipment TX3706 Falcon 25 Series Connector
Manufacturer Trolex Ltd

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

Issue 0

Drawing No	Sheets	Rev	Approved date	Title
P5609.01.01	1	A	11 Dec 2015	General Arrangement
P5609.01.02	1	A	11 Dec 2015	General Arrangement
P5609.01.04	1	A	11 Dec 2015	Certification Marking Details

Issue 1

Drawing No	Sheets	Rev	Approved date	Title
P5609.01.05	1	A	15 Feb 2016	Ex d Cap Arrangement

Issue 2

Drawing No	Sheets	Rev	Approved date	Title
P5609.01.01	1 of 1	B	04 Aug 2016	TX3706 Series Ex d Connector General Arrangement
P5609.01.03	1 of 1	A	04 Aug 2016	TX3706 Series Ex d Connector General Arrangement of Fixed Receptacle
P5609.01.04	1 of 1	B	04 Aug 2016	TX3706 Ex d Connector Certification Marking Details
P5609.01.05	1 of 1	B	04 Aug 2016	TX3706 Series Ex d Connector Ex d Cap Arrangement
P5609.01.06	1 of 1	A	04 Aug 2016	TX3706.4 Ex d Connector Flash Drive General Arrangement
P5609.2007	1 of 1	A	04 Aug 2016	TX3706.3 Ex d Connector Label TX Number
P5609.2008	1 of 1	A	04 Aug 2016	TX3706.3 Ex d Connector Label Grpl
P5609.2009	1 of 1	A	04 Aug 2016	TX3706.3 Ex d Connector Label GrplI
P5609.2006	1 of 1	A	04 Aug 2016	TX3706.3 Ex d Connector Label Certificate Number.

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Certificate Number CML 15ATEX1143X
Equipment TX3706 Falcon 25 Series Connector
Manufacturer Trolex Ltd

Issue 3

Drawing No	Sheets	Rev	Approved date	Title
P5609.01.01	1 of 1	C	22 Jun 2017	General Arrangement
P5609.01.03	1 of 1	B	22 Jun 2017	General Arrangement of Fixed Receptacle
P5609.01.07	1 of 1	A	22 Jun 2017	General Arrangement of Fixed Receptacle - Fibre
P5609.2016	1 of 1	A	22 Jun 2017	Marking, TX3706.6 ATEX/IECEX Group I
P5609.2017	1 of 1	A	22 Jun 2017	Marking, TX3706.6 ATEX/IECEX Group II
P5609.2018	1 of 1	A	22 Jun 2017	Marking, TX3706.7 ATEX/IECEX Group I
P5609.2019	1 of 1	A	22 Jun 2017	Marking, TX3706.7 ATEX/IECEX Group II
P5609.2020	1 of 1	A	22 Jun 2017	Marking, TX3706.8 ATEX/IECEX Group I
P5609.2021	1 of 1	A	22 Jun 2017	Marking, TX3706.8 ATEX/IECEX Group II

Issue 4

Drawing No	Sheets	Rev	Approved date	Title
P5609.01.01	1 of 1	D	06 Feb 2018	General Arrangement
P5609.01.02	1 of 1	B	06 Feb 2018	General Arrangement
P5609.01.05	1 of 1	C	06 Feb 2018	Exd Cap Arrangement

Issue 5

Drawing No	Sheets	Rev	Approved date	Title
P5609.01.09	1 of 1	A	06 Dec 2018	Falcon 25 Hybrid Insert Arrangement
P5609.2022	1 of 1	A	06 Dec 2018	Marking, TX3706.9 ATEX/IECEX Group I
P5609.2023	1 of 1	A	06 Dec 2018	Marking, TX3706.9 ATEX/IECEX Group II & III
P5609.2024	1 of 1	A	06 Dec 2018	Marking, TX3706.10 ATEX/IECEX Group I
P5609.2025	1 of 1	A	06 Dec 2018	Marking, TX3706.10 ATEX/IECEX Group II & III
P5609.2026	1 of 1	A	06 Dec 2018	Marking, TX3706.11 ATEX/IECEX Group I
P5609.2027	1 of 1	A	06 Dec 2018	Marking, TX3706.11 ATEX/IECEX Group II & III