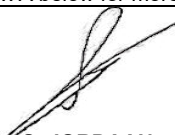
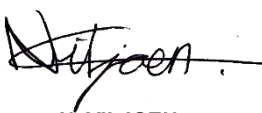




Mining And Surface Certification (Pty) Ltd

2015/021934/07

THIS CERTIFICATE IS ISSUED AS AN I.A. CERTIFICATE IN TERMS OF THE MINE HEALTH AND SAFETY ACT, ACT NO 29 OF 1996 (AND REGULATIONS), THE OCCUPATIONAL HEALTH AND SAFETY ACT (ACT 85 OF 1993) AND REGULATION 17 OF THE ELECTRICAL MACHINERY REGULATIONS

IA CERTIFICATE	MASC M/26-8423X	Issue	0
Issue Date	23 September 2026	Expiry Date	27 August 2028
** Based on Certificate No	IECEx CML 26.0021X	Issue / Variations / Amendment	0
Requested by	Troxel Limited Newby Road, Hazel Grove Stockport, Cheshire SK7 5DY, United Kingdom		
Manufacturer	Troxel Limited Newby Road, Hazel Grove Stockport, Cheshire SK7 5DY, United Kingdom		
Description	The TX6648.40(.x...) Un-Interruptible Power Supply (UPS) incorporates a modified TX6641 Intrinsically safe power supply chassis housed inside a metal enclosure which is powder filled and sealed. It also incorporates a separate battery compartment, attached to the main enclosure which is not powder filled. A battery timer switch circuit board is located in the powder filled part of the enclosure. The battery timer switch circuit detects if the battery is being used to supply power and can switch off the power after a pre-determined length of time. See Base Certificate** Annex for full product description.		
Equipment	UPS Power Supply	Type	TX6648.40(xx...) 3.5 Ah
MARKING: Original marking as per certificate ** remains applicable. IA number must be added.	Type: Ex Marking:	TX6648.40(xx...) 3.5 Ah UPS Power Supply Ex eb q [ia Ma] I Mb * Ex ia I Ma ** Ta = -20°C to +55°C * applies when the equipment is operating on mains power ** applies when the equipment is operating on battery back-up	
	IA Number: Warnings:	MASC M/26-8423X (To be additionally marked on equipment) See Base Certificate ** (original marking must be applied)	
Quality Assurance report (QAR) / Notification (QAN):		GB/SIR/QAR07.0017/14	
Quality Assurance report (QAR) / Notification (QAN) Expiry date:		27 August 2028	
Compliance: The equipment as described above has been allocated the rating <u>Explosion Protected 'as above'</u> utilizing the SANS/IEC Standards: • SANS (IEC) 60079-0: 2019 Equipment - General requirements • SANS (IEC) 60079-5: 2016 Equipment protection by powder filling "q" • SANS (IEC) 60079-7: 2019 Equipment protection by increased safety "e" • SANS (IEC) 60079-11: 2024 Equipment protection by intrinsic safety "i" <i>Note: This certificate covers only the listed standards and does not imply compliance to any other standard, related or inferred. It is up to the manufacturer to ensure that the product complies to all relevant standards for the application.</i>			
Specific conditions of use "X": • Refer to Annex A below for more details.			
Conditions of manufacture: • Refer to Annex A below for more details.			
 S. JORDAAN TECHNICAL SPECIALIST		 N. VILJOEN TECHNICAL OFFICER	
This certificate covers all units sold as long as the QAR/QAN remains valid. According to the relevant requirements of the MHS Act and the OHS Act, production units of explosion protected equipment are required to comply with third party quality assurance (an approved mark scheme or batch testing by an accredited test laboratory).			

Apparatus in hazardous locations is subject to the following provisions as applicable, which shall be adhered to:

SANS 10086 requirements;

Any conditions mentioned in the above certificate;

Any relevant requirements of the MHS Act;

Any restrictions and conditions enforced by the chief inspector of mines, principal inspector (Group I equipment) or chief inspector of factories (Group II equipment).

This certificate may only be reproduced in full

The certificate is not transferable and remains the property of the issuing body.

IA CERTIFICATE: MASC M/26-8423X
Equipment: TX6648.40(xx...) 3.5 Ah UPS Power Supply
(Expiry date: 27 August 2028)

Page 2 of 2

ANNEX A

This document is based on and must be read in conjunction with certificate IECEx CML 26.0021X.	
Description (According to Base Certificate) **	
"Refer to description in Base Certificate ** (and any applicable schedules/issues/variatioins)."	
Standard compliance	See Base Certificate **
Specific conditions of use ("X")	• All cable entries shall be made using suitably certified Ex e cable glands. • The use of conduit is not permitted.
Conditions of manufacture	• The mains transformer shall be subjected to routine tests and be able to withstand a test voltage of at least 2500 Vrms applied between primary and secondary windings and at least 1000 Vrms applied between all windings and the core or screen. • The routine Electric strength test of the filling material shall be carried out prior to the filling process. • The equipment shall be subjected to routine verification. No damage shall be evident to the conformal coating or encapsulation, this includes but is not limited to; • Cracks; • non-homogeneous covering of the encapsulated or coated parts; • inadmissible shrinkage; • swelling; • decomposition; • failure of adhesion (separation of any adhered parts) or flaking; and • softening.
Conditions of Certification	• This IA Certificate covers all units sold from the date of this document to the expiry date of this certificate. • As per ARP 0108: 2018 / NCoP 2398: 2022 (as applicable) a maximum three yearly review is required on this IA Certificate (expiry is determined as per the QAR/QAN/QMS expiry date). • The apparatus must be additionally marked with the MASC marking details above. • This approval only covers the equipment as certified above and does not include any scheduled additions or variations / amendments / new issues to the certificate(s), made after the above date. • The equipment does not need to be re-tested when used on the conditions and with such restrictions as prescribed by the certificate on which this IA Certificate is based and any other conditions in this IA Certificate. • The certification on which this IA Certificate is based must remain valid. • The extent of the requirements in the ARP 0108:2018 / NCoP 2398: 2022 (as applicable), SANS 10108 and any other applicable regulations on the certification of the equipment must remain unchanged. • The Ex-quality assurance notification/report for the equipment must remain valid.
Conclusion:	• From the above and the selective examination of the documentation, nothing contrary to the requirements of the applicable standards was found, provided that the equipment / component is used as described in the above document / certificate and according to the MASC conditions below. A MASC IA certificate is issued based on the work done as per the Base Certificate **. • The routine tests for production units according to the Base Certificate ** must be complied with (if applicable).

This document is issued based on Mining And Surface Certification's Standard Contract terms and conditions available on request.

While every endeavour is made to ensure that a test / assessment / inspection is representative and accurately performed, and that a report / certificate is accurate in the quoted results and conclusions drawn from the test / assessment / inspection, MASC or its directors/employees shall in no way be liable for any error made in carrying out the test / assessment or for any erroneous statement, whether in fact or in opinion, contained in a report / certificate issued pursuant to a test / assessment / inspection.

MASC takes no responsibility for any non-conformances, exclusions, or any results / assessments / inspections not in compliance with the standards. By marking the equipment in accordance with the documentation / standard, the manufacturer / applicant attests on his own responsibility that the equipment / installation has been designed and constructed in accordance with the applicable requirements of the relevant standards and documentation, that the routine verifications / routine tests have been correctly completed and the equipment / installation complies with the documentation and standard(s).

This document is only for use and application in South Africa. It is issued based on National interpretations and accepted practices.

This document may only be reproduced in full.

This certificate is not transferable and remains the property of the issuing body.

This document will not be supported by MASC for certification purposes outside the borders of South Africa.

Mining And Surface Certification (Pty) Ltd Reg No: 2015/021934/07
Directors: Roelof Viljoen & Francois du Toit
Unit #5, Lelyta Park, 45 Jurg Avenue, Hennospark Ext 87, Centurion, 0157
P.O. Box 14344, Clubview, 0014
Tel: 012 653 2959 ♦ Fax: 086 605 8568
e-mail: info@masc-ex.co.za



IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: **IECEx CML 26.0021X** Page 1 of 3 [Certificate history:](#)

Status: **Current** Issue No: 0

Date of Issue: 2026-04-28

Applicant: **Trolex Limited**
Newby Road
Hazel Grove
Stockport
Cheshire SK7 5DY
United Kingdom

Equipment: **TX6648.40(xx...) 3.5 Ah UPS Power Supply**

Optional accessory:

Type of Protection: **Powder Filled Ex "q", Increased Safety Ex "eb", Intrinsic Safety Ex "ia" / "[ia]"**

Marking: Ex eb q [ia Ma] I Mb *
Ex ia I Ma **
Ta = -20°C to +55°C
* applies when the equipment is operating on mains power
** applies when the equipment is operating on battery back-up

Approved for issue on behalf of the IECEx
Certification Body:

Stelios Roubedakis

Position:

Certification Manager

Signature:
(for printed version)

Date:
(for printed version)

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



Certificate issued by:

Eurofins E&E CML Limited
Unit 1, Newport Business Park
New Port Road
Ellesmere Port, CH65 4LZ
United Kingdom





IECEx Certificate of Conformity

Certificate No.: **IECEx CML 26.0021X**

Page 2 of 3

Date of issue: 2026-04-28

Issue No: 0

Manufacturer: **Trolex Limited**
Newby Rd
Hazel Grove
Stockport
Cheshire SK7 5DY
United Kingdom

Manufacturing
locations: **Trolex Limited**
Newby Rd
Hazel Grove
Stockport
Cheshire SK7 5DY
United Kingdom

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

STANDARDS :

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

[IEC 60079-0:2017](#) Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

[IEC 60079-11:2023](#) Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition:7.0

[IEC 60079-5:2015](#) Explosive atmospheres –Part 5: Equipment protection by powder filling "q"
Edition:4.0

[IEC 60079-7:2017](#) Explosive atmospheres - Part 7: Equipment protection by increased safety "e"
Edition:5.1

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

TEST & ASSESSMENT REPORTS:

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

Test Report:

[GB/CML/ExTR26.0080/00](#)

Quality Assessment Report:

[GB/SIR/QAR07.0017/14](#)



IECEx Certificate of Conformity

Certificate No.: **IECEx CML 26.0021X**

Page 3 of 3

Date of issue: 2026-04-28

Issue No: 0

EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

The TX6648.40(.x...) Un-Interruptible Power Supply (UPS) incorporates a modified TX6641 Intrinsically safe power supply chassis housed inside a metal enclosure which is powder filled and sealed. It also incorporates a separate battery compartment, attached to the main enclosure which is not powder filled. A battery timer switch circuit board is located in the powder filled part of the enclosure. The battery timer switch circuit detects if the battery is being used to supply power and can switch off the power after a pre-determined length of time.

Refer to Certificate Annex for full Product Description and Conditions of Manufacture.

SPECIFIC CONDITIONS OF USE: YES as shown below:

Refer to Certificate Annex

Annex:

[Certificate Annex IECEx CML 26.0021X Issue 0.pdf](#)

Annexe to: IECEx CML 26.0021X Issue 0
Apparatus: TX6648.40(.x...) 3.5Ah UPS Power Supply
Applicant: Trolex Limited



Description

The TX6648.40(.x...) Un-Interruptible Power Supply (UPS) incorporates a modified TX6641 Intrinsically safe power supply chassis housed inside a metal enclosure which is powder filled and sealed. It also incorporates a separate battery compartment, attached to the main enclosure which is not powder filled. A battery timer switch circuit board is located in the powder filled part of the enclosure. The battery timer switch circuit detects if the battery is being used to supply power and can switch off the power after a pre-determined length of time.

Only the 0.5A and 1.0A versions of the TX6641 Chassis are used for the UPS. The TX6648 uses two 3.5 Ah batteries. These provide power to equipment located in the hazardous area if the mains power supply fails or is turned off for safety reasons.

When mains powered, this equipment is deemed to be Category M2(M1) EPL Mb (Ma) equipment. When battery powered, this equipment is deemed to be Category M1 EPL Ma Equipment.

The Electrical output parameters are as follows:

Current output options	-	0.5A or 1.0 A
Voltage output options	-	7.5 V or 12 V
Input Supply options Um	-	230 rms, 110 Vrms, 55 Vrms, 42 Vrms or 24 Vrms

I.S. Output Terminals +V and 0 V

7.5 PSU (Uo = 8.5 V o/p crowbar)	Short Circuit Current, Io in A	Max Output Power, Po in W	Lo/Ro Ratio in $\mu\text{H}/\Omega$	Capacitance, Co in μF
0.5 A	0.873	5.28	72.69	646
1.0 A	1.76	10.63	36.17	560

12.0 V PSU (Uo = 13.0 V o/p crowbar)	Short Circuit Current, Io in A	Max Output Power, Po in W	Lo/Ro Ratio in $\mu\text{H}/\Omega$	Capacitance, Co in μF
0.5 A	0.873	6.33	72.6	32.0
1.0 A	1.76	12.73	36.17	30.29

Output terminal C1 (V_sig) and C2 (0V)

Ui	=	16.5 V	Co	=	10 μF
Uo	=	13.65 V	Lo	=	700 mH
Io	=	25 mA	Lo/Ro	=	5470 $\mu\text{H}/\text{ohm}$
Po	=	85.2 mW			
Ci	=	12 nF			
Li	=	0			



Certificate Annex IECEx
Version: 12.0 Approval: Approved



Eurofins E&E CML Limited
Newport Business Park, New Port Road
Ellesmere Port, CH65 4LZ, UK

Output Terminals C3 (I_{sig}) and C2 (0V)

U _i	=	16.5 V	C _i	=	12 nF
P _i	=	0.3 W	L _i	=	0
U _o	=	13.65 V	C _o	=	10 µF
I _o	=	213.6 mA, Transient	L _o	=	9.4 mH
I _o	=	105.4 mA, continuous	L _o /R _o	=	312 µH/ohm
P _o	=	1.25 W			

Relay contact terminals P1 (common), P2 (normally closed) and P3 (normally open)

U _i	=	90 V
I _i	=	0.25 A
P _i	=	3.0 W

Switch terminals T1 and T2

Connect to a volt free switch:

U _i	=	0 V
I _i	=	0 A
P _i	=	0 W

Conditions of Manufacture

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

- i. The mains transformer shall be subjected to routine tests and be able to withstand a test voltage of at least 2500 V_{rms} applied between primary and secondary windings and at least 1000 V_{rms} applied between all windings and the core or screen.
- ii. The routine Electric strength test of the filling material shall be carried out prior to the filing process.
- iii. The equipment shall be subjected to routine verification. No damage shall be evident to the conformal coating or encapsulation, this includes but is not limited to;
 - Cracks;
 - non-homogeneous covering of the encapsulated or coated parts;
 - inadmissible shrinkage;
 - swelling;
 - decomposition;
 - failure of adhesion (separation of any adhered parts) or flaking; and
 - softening.



Certificate Annex IECEx
Version: 12.0 Approval: Approved



Eurofins E&E CML Limited
Newport Business Park, New Port Road
Ellesmere Port, CH65 4LZ, UK



Specific Conditions of Use

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

- i. All cable entries shall be made using suitably certified Ex e cable glands.
- ii. The use of conduit is not permitted.



Certificate Annex IECEX
Version: 12.0 Approval: Approved



Eurofins E&E CML Limited
Newport Business Park, New Port Road
Ellesmere Port, CH65 4LZ, UK