

EU Type Examination Certificate CML 21ATEX2404X Issue 1

- 1 Equipment intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU
 - 2 Equipment **TX6648.35(.x...) 3.5Ah UPS Power Supply**
TX6649.35(.x...) 25Ah UPS Power Supply
 - 3 Manufacturer **Trolex Limited**
 - 4 Address **Newby Road,**
Hazel Grove,
Stockport,
Cheshire,
SK7 5DY, United Kingdom
 - 5 The equipment is specified in the description of this certificate and the documents to which it refers.
 - 6 Eurofins CML B.V., Chamber of Commerce No 67386717, 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 60079-5:2015

EN IEC 60079-7:2015+A1:2018

EN 60079-11:2012

- 10 The equipment shall be marked with the following:

 I M2(M1)

Ex eb q [ia Ma] I Mb*

Ta= -20°C to +55°C

 I M1

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

11 Description

The TX6648.35(x...) and TX6649.35(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 and the TX6649 uses two 25 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 ¹ or 24 Vrms

Note 1: Only available for TX6648 model

I.S. Output Terminals +V and 0 V

7.5 PSU (U _o = 8.5 V o/p crowbar)	Short Circuit Current, I_o in A	Max Output Power, P_o in W	Lo/Ro Ratio in μH/Ω	Capacitance, C_o 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 (U _o = 13.0 V o/p crowbar)	Short Circuit Current, I_o in A	Max output Power, P_o in W	Lo/Ro Ratio in μH/Ω	Capacitance, C_o 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)

U _i	=	16.5 V	C _o	=	10μF
U _o	=	13.65 V	L _o	=	700 mH
I _o	=	25 mA	L _o /R _o	=	5470 μH/ohm
P _o	=	85.2 mW			
C _i	=	12 nF			
L _i	=	0			

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

Variation 1

This Variation introduces the following changes:

- i. Modification of the encapsulant of the relay.
- ii. Addition of schedule drawing

12 Certificate history and evaluation reports

Issue	Date	Associated Report	Notes
0	06 July 2021	R14110A/00	Issue of Prime Certificate
1	29 Apr 2026	R18999A/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.

- i. 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.
- ii. The routine Electric strength test of the filling material shall be carried out prior to the filling process.

14 Specific Conditions of Use (Special Conditions)

The following conditions relate to safe installation and/or 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

Certificate Number CML 21ATEX2404X
Equipment TX6648.35(.x...) 3.5Ah UPS Power Supply
TX6649.35(.x...) 25Ah UPS Power Supply
Manufacturer Trolex Limited



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

Issue 0

Drawing No	Sheets	Rev	Approved Date	Title
P5531.2026	1 of 1	A	06 July 2021	ATEX/IECEX Label Drawing – TX6648.35
P5531.2027	1 of 1	A	06 July 2021	ATEX/IECEX Label Drawing – TX6649.35
P5093.27	1 of 1	C	06 July 2021	Reed Relay
P5531.04.01	1 of 1	C	06 July 2021	Transformer (24Vac)
P5531.04.02	1 of 1	A	06 July 2021	Transformer (42Vac)
P5531.04	1 of 1	C	06 July 2021	Transformer (110Vac, 230 Vac)
P5531.05	1 of 1	C	06 July 2021	Battery timer switch PCB artwork
P5531.10	1 of 1	C	06 July 2021	Battery Timer switch certified circuit diagram
P5531.10	1 of 1	C	06 July 2021	Battery Timer switch certified circuit diagram (parts list)
P5531.49	1 of 1	B	06 July 2021	Mains input terminal board, PCB artwork
P5531.61	1 of 1	F	06 July 2021	UPS, master certified circuit diagram
P5531.61	1 of 1	F	06 July 2021	UPS, master certified circuit diagram (parts list)
P5531.62.01	1 of 1	D	06 July 2021	PCB Bottom layer
P5531.62.02	1 of 1	D	06 July 2021	PCB bottom overlay
P5531.62.03	1 of 1	D	06 July 2021	PCB inner layer 1
P5531.62.04	1 of 1	D	06 July 2021	PCB inner layer 2
P5531.62.05	1 of 1	D	06 July 2021	PCB top layer
P5531.62.06	1 of 1	D	06 July 2021	PCB top overlay
P5531.65	1 of 1	B	06 July 2021	IS Output terminal board, PCB artwork, UPS
P5531.106	1 of 1	B	06 July 2021	Regulator reset PCB
P5531.107	1 of 1	C	06 July 2021	Input regulator and reset PCB circuit diagram
P5531.107	1 of 1	C	06 July 2021	Input regulator and reset PCB circuit diagram (parts List)
P5531-02-01	1 of 1	C	06 July 2021	General arrangement, Chassis

Certificate Annex

Certificate Number CML 21ATEX2404X
Equipment TX6648.35(.x...) 3.5Ah UPS Power Supply
TX6649.35(.x...) 25Ah UPS Power Supply
Manufacturer Trolex Limited



Drawing No	Sheets	Rev	Approved Date	Title
P5531-02-04	1 of 1	B	06 July 2021	TX6648 Series PSU, General Arrangement
P5531-83	1 of 1	A	06 July 2021	Relay details (RL2) battery switching
P5531-108	1 of 1	B	06 July 2021	Fuse potted

Issue 1

Drawing No	Sheets	Rev	Approved Date	Title
P5093.27	1 of 1	D	29 Apr 2026	REED RELAY
P5531-02-05	1 of 1	B	29 Apr 2026	General Arrangement