



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 21.0061X	Page 1 of 3	Certificate history:
Status:	Current	Issue No: 0	
Date of Issue:	2021-06-02		
Applicant:	eltherm Production GmbH Ernst-Heinkel-Straße 6-10 57299 Burbach Germany		
Equipment:	ELAK-EX Range of Junction Boxes		
Optional accessory:			
Type of Protection:	Increased Safety "eb", Intrinsic Safety "ia, ib", Optical Radiation "op is, op pr, op sh", Dust Ignition "ta, tb"		
Marking:	Refer to Certificate Annex for Marking.		

Approved for issue on behalf of the IECEx
Certification Body:

R C Marshall

Position:

Operations Manager

Signature:
(for printed version)

Date:
(for printed version)

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Certificate issued by:

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





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Manufacturer: **eltherm production GmbH**
Ernst-Heinkel-Str. 6-10
57299 Burbach
Germany

Manufacturing
locations:

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 60079-11:2011](#) Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition:6.0

[IEC 60079-26:2014](#) Explosive atmospheres – Part 26: Equipment with Equipment Protection Level (EPL) Ga
Edition:3.0

[IEC 60079-28:2015](#) Explosive atmospheres - Part 28: Protection of equipment and transmission systems using optical radiation
Edition:2

[IEC 60079-31:2013](#) Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"
Edition:2

[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/ExTR21.0095/00](#)

Quality Assessment Report:

[FR/INE/QAR12.0007/06](#)



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EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

The ELAK-Ex range of junction boxes are electrical or optical terminal boxes, utilising the Ex-Component certified glass reinforced polyester (GRP) enclosures covered by certificate number CML20ATEX3008U.

Refer to Annex for full description and Conditions of Manufacture.

SPECIFIC CONDITIONS OF USE: YES as shown below:

Refer to Annex for Specific Conditions of Use.

Annex:

[IECEx CML 21.0061X Issue 0 Annex_1.pdf](#)

Annexe to: IECEx CML 21.0061X Issue 0
Applicant: ELAK-EX Range of Junction Boxes
Apparatus: Eltherm Production GmbH



Marking

Ex ia ④ IIC T① Ga Ex eb ③④ IIC T① Gb Ex ib ④ IIC T① Gb
Ex ta IIIC T② °C Da Ex tb IIIC T② °C Db Ex tb IIIC T② °C Db

- ① Temperature Class T4, T5, T6. See product description
- ② Maximum Surface Temperature T85°C, T100°C. See product description
- ③ Marking to include db if fitted with flameproof connector
- ④ When fitted with fibre optic cassette, marking to include either op is, op pr, op sh. See product description

Description

The ELAK-Ex range of junction boxes are electrical or optical terminal boxes, utilising the Ex-Component certified glass reinforced polyester (GRP) enclosures covered by certificate number CML20ATEX3008U.

The junction boxes may be provided with cable entry holes. The holes may be located either through the side walls or the rear of the enclosure base. The holes may be provided with a metric parallel thread, or without thread (clearance hole). Suitably certified blanking plugs, reducers and adapters and breather drains may be fitted provided into the enclosure via threaded holes, provided they meet the minimum IP requirements marked on the enclosure.

Through the wall of the enclosure may be provided an internal or external or internal and external threaded earth stud of a minimum size of M6.

The ELAK-Ex range of junction boxes are fitted with an arrangement of suitably certified terminals.

The ELAK-Ex range of enclosures are available in the following sizes:

ELAK-Ex Enclosure	Type	Width (mm)	Height (mm)	Depth (mm)
ELAK-EX-1	B	80	75	55
ELAK-EX-2	B	110	75	55
ELAK-EX-16	B	160	75	55
ELAK-EX-19	B	190	75	55
ELAK-EX-19.5	B	190	75	75
ELAK-EX-23	A	230	75	55
ELAK-EX-4	B	122	120	90
ELAK-EX-5	B	220	120	90
ELAK-EX-Q	B	160	160	90
ELAK-EX-9	B	260	160	90
ELAK-EX-10	B	360	160	90

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ELAK-EX-11	A	560	160	90
ELAK-EX-12	B	255	250	120
ELAK-EX-12.5	B	205	200	120
ELAK-EX-13	B	400	250	120
ELAK-EX-13.5	B	400	250	160
ELAK-EX-14	A	600	250	120
ELAK-EX-15	B	400	405	120
ELAK-EX-15.5	B	400	405	201

Table 1: ELAK-Ex Enclosure Sizes

Before the junction box is installed, its total dissipated power for the particular application will be calculated in accordance with IEC 60079-7 Ed 5:2015/ EN 60079-7:2015, Annex E, E.2 and will not exceed the values given in the tables below (junction boxes of size not specified in the tables may be manufactured subject to the maximum dissipated power being based on a smaller enclosure):

EPL Ga Gb Db						
ELAK-Ex ref.	Maximum Power Dissipation (W)					
	(*) T6/T85°C Ta +40°C (max.)	(*) T6/T85°C Ta +55°C (max.)	(*) T6/T85°C Ta +60°C (max.)	(*) T6/T85°C Ta +65°C (max.)	(*) T5/T100°C Ta +55°C (max.)	(*) T4/T100°C Ta +90°C (max.)
1	8.390	2.23	1.73	1.45	8.390	8.390
2	8.551	2.00	1.70	1.45	8.551	8.551
16	8.833	2.00	1.70	1.45	8.833	8.833
19	9.012	2.07	1.80	1.29	9.012	9.012
19.5	9.012	2.07	1.80	1.29	9.012	9.012
23	9.260	2.00	1.70	1.10	9.260	9.260
4	9.378	2.00	1.70	1.45	9.378	9.378
5	10.500	2.30	1.70	1.10	10.500	10.500
Q	10.348	2.00	1.70	1.10	10.348	10.348
9	11.933	2.30	1.70	1.10	11.933	11.933
10	13.793	4.50	3.29	2.10	13.793	13.793
11	18.338	6.68	5.20	4.00	18.338	18.338
12	15.474	2.30	1.70	1.10	15.474	15.474
12.5	15.474	2.30	1.70	1.10	15.474	15.474
13	20.867	5.20	4.00	3.00	20.867	20.867
13.5	20.867	5.20	4.00	3.00	20.867	20.867

14	30.384	7.97	6.59	4.79	30.384	30.384
15	31.350	8.26	6.00	4.40	31.350	31.350
15.5	31.350	8.26	6.00	4.40	31.350	31.350

Table 2: ELAK-Ex Range of Junction Boxes – Maximum Power Dissipation for EPL Ga Gb Db

EPL Da						
ELAK-Ex ref.	Maximum Power Dissipation (W)					
	T85°C Ta +40°C (max)	T85°C Ta +55°C (max)	T85°C Ta +60°C (max)	T85°C Ta +65°C (max)	T100°C Ta +55°C (max)	T100°C Ta +90°C (max)
1	4.195	1.115	0.865	0.725	4.195	4.195
2	4.2755	1	0.85	0.725	4.2755	4.2755
16	4.4165	1	0.85	0.725	4.4165	4.4165
19	4.506	1.035	0.9	0.645	4.506	4.506
19.5	4.506	1.035	0.9	0.645	4.506	4.506
23	4.63	1	0.85	0.55	4.63	4.63
4	4.689	1	0.85	0.725	4.689	4.689
5	5.25	1.15	0.85	0.55	5.25	5.25
Q	5.174	1	0.85	0.55	5.174	5.174
9	5.9665	1.15	0.85	0.55	5.9665	5.9665
10	6.8965	2.25	1.645	1.05	6.8965	6.8965
11	9.169	3.34	2.6	2	9.169	9.169
12	7.737	1.15	0.85	0.55	7.737	7.737
12.5	7.737	1.15	0.85	0.55	7.737	7.737
13	10.4335	2.6	2	1.5	10.4335	10.4335
13.5	10.4335	2.6	2	1.5	10.4335	10.4335
14	15.192	3.985	3.295	2.395	15.192	15.192
15	15.675	4.13	3	2.2	15.675	15.675
15.5	15.675	4.13	3	2.2	15.675	15.675

Notes: The table above relate to the limiting temperature of the terminal insulation, refer to the 'Conditions of Manufacture'.

Table 3: ELAK-Ex Range of Junction Boxes – Maximum Power Dissipation for EPL Da

Optional fibre optic jointing facilities may be fitted within the terminal compartment; these are installed on a non-metallic, splice tray either alone or alongside the existing terminals. The jointing facilities are intended for use with fibre optic equipment supplied from a power source that is certified as compliant with IEC / EN 60079-28:2015. For “op pr” or “op sh” applications, the ABTECH fibre optic cassette type FJC under certificate CML 17ATEX9035U/ IECEx CML 17.0020U are used.

Optical Power	
‘op pr’ applications	‘op is’ applications
T6/T85°C at a maximum ambient of $\leq 60^{\circ}\text{C}$	T6/T85°C at a maximum ambient of $\leq 65^{\circ}\text{C}$ or T4/T100°C at a maximum ambient of $\leq 80^{\circ}\text{C}$
When ‘op pr’ is used with or without terminals, the splice case is limited to 100mW and a -40°C to 60°C ambient temperature.	When ‘op is’ is used with or without terminals. Fibre optic source is limited for all T classes to a maximum irradiance of 5 mW/mm^2 (surface area not exceeding 400 mm^2) Signal power is limited to 15 mW @T6 and 35 mW @T4.

Table 4: ELAK-Ex Range of Junction Boxes – Optical Power Limits for “op pr” and “op is” applications

Conditions of Manufacture

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

- i. Where the product incorporates certified parts or safety critical components the manufacturer shall ensure that any changes to those parts or components do not affect the compliance of the certified product that is the subject of this certificate.
- ii. When the manufacturer has equipped the junction boxes with wiring to the terminals, a routine electric strength test shall be carried out in accordance with IEC 60079-7:2015 Clause 7.1
- iii. All terminals will be installed in accordance with their certificate conditions and the relevant codes of practice/wiring regulations paying particular attention to the following:
 - The maximum service temperature range.
 - The minimum creepage and clearance distances shall be maintained.
 - The rated voltages and currents may vary if cross-connection facilities are used.
 - The reduction in rating of adjacent terminals shall be observed, where applicable.

The terminals fitted into the junction boxes shall also conform to the following requirements:

Temperature class/ Dust marking	Requirement
T6/T85°C	The terminals shall have an insulation limiting temperature of +100°C minimum.
T5/T100°C	The terminals shall have an insulation limiting temperature of +100°C minimum.
T4/T135°C	The terminals shall have an insulation limiting temperature of +130°C minimum.

- iv. Suitably certified Ex e equipment such as breathing devices and blanks may be fitted to the enclosure providing the enclosure maintains compliance with IEC 60529 code IP65 or better.
- v. The manufacturer will take all reasonable steps to ensure that the power dissipated by the Junction Box does not exceed the maximum value stipulated in the table detailed in the Description of Equipment, in addition, the manufacturer will supply all the relevant information that will enable the user/installer to calculate the dissipated power in Watts for each Junction Box in accordance with IEC 60079-7 Annex E, E2.
- vi. When the junction boxes are used for intrinsically safe applications, a 3 mm separation distance between the enclosure is required, there shall also be a minimum of 6 mm between different intrinsically safe circuits.
- vii. When trunking is fitted, it may be sited as required and the minimum creepage and clearance distances shall still be met
- viii. Cable insulation shall be rated at 30°C greater than max operation ambient.
- ix. If the enclosures are supplied fitted with blanking plugs, reducers, adapters or breather drains, the manufacturer shall ensure that the user/installer is provided with copies of the associated certificate for the fitted devices.
- x. When the optional earth bar is fitted it shall allow for a size of conductor connection in accordance with Clause 15.3 of IEC 60079-0.

Specific Conditions of Use

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

- i. When used in an EPL ta (Da) application, the power supply to the equipment is to be rated for a prospective short circuit current of not more than 10 kA.
- ii. When fitted with 'Ex op pr' splice case, the fibre cable outside the enclosure shall be installed such that mechanical damage is prevented, including where entering or exiting the increased safety enclosure.
- iii. When marked 'Ex op is', the fibre optic source supplying this equipment shall be suitably certified as compliant with EN 60079-28:2007 and provide an inherently safe optical source (op is), EPL Gb, subsequently the parameters in Table 4 of the description apply.
- iv. When marked 'Ex op pr', the fibre connectors contained within the increased safety enclosure must not be separated whilst energised if an explosive atmosphere may be present.

- v. If not used, fibre ST connectors within the increased safety enclosure must have dust covers fitted.
- vi. All optical components used with the Fibre Optic Cassette shall be suitable for the ratings and service temperature range of the cassette
- vii. When marked “op sh”, the fibre optic source shall be suitably certified as compliant with IEC/EN 60079-28:2015 and provide an interlocked optical source (op sh).

Components covered by Ex Certificates issued to older editions of Standards

None.