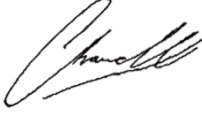





Mining And Surface Certification (Pty) Ltd

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 S/18-1639X	Issue	3
Issue Date	30 April 2024	Expiry Date	30 April 2027
** Based on Certificate No	IECEX CML 17.0144X	Issue / Variations / Amendment	4
Requested by	Pepperl+Fuchs (Pty) Ltd Zerwick Forum, 8 Glen Eagle Office Park Cnr Monument Rd and Braambos St, Glen Erasmia, Kempton Park 1619, South Africa		
Manufacturer	Pepperl+Fuchs SE Lilienthalstrasse 200, 68307 Mannheim, Germany		
Description	The GR Terminal Box is a range of increased safety, black, anti-static, glass-fibre reinforced polyester enclosures with a base and screw-down cover (with optional hinges in addition to the fixing screws). The range utilises the Ex-Component certified Pepperl+Fuchs GR enclosures covered under certificate numbers IECEX CML 17.0039U and CML 17ATEX3084U. See Base Certificate** Annex for full description.		
Equipment	Terminal Box	Type	GR
MARKING: Original marking as per certificate ** remains applicable. IA number must be added.	Type:	GR Terminal Box	
	Ex Marking:	Ex eb IIC T* Gb Ex ia IIC T* Gb Ex op pr IIC T6 Gb Ex eb ia IIC T* Gb Ex eb op pr IIC T* Gb Ex ia op pr IIC T* Gb Ex eb ia op pr IIC T* Gb Ex tb IIIC T**C Db	
	IA Number:	MASC S/18-1639X (To be additionally marked on equipment)	
	Warnings:	See Base Certificate ** (original marking must be applied)	
Quality Assurance report (QAR) / Notification (QAN):	DE/PTB/QAR06.0015/21 FR/INE/QAR12.0003/11 US/UL/QAR07.0005/18		
Compliance:	The equipment as described above has been allocated the rating <u>Explosion Protected 'as above'</u> utilizing the SANS/IEC Standards: <ul style="list-style-type: none"> • SANS (IEC) 60079-0: 2019 Equipment - General requirements • SANS (IEC) 60079-7: 2019 Equipment protection by increased safety "e" • SANS (IEC) 60079-11: 2012 Equipment protection by intrinsic safety "i" • SANS (IEC) 60079-28: 2016 Protection of equipment and transmission systems using optical radiation • SANS (IEC) 60079-31: 2023 Equipment dust ignition protection by enclosure "t" <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>		
Special conditions of safe use "X":	<ul style="list-style-type: none"> • Refer to Annex A below for more details. 		
Conditions of manufacture:	<ul style="list-style-type: none"> • Refer to Annex A below for more details. 		
 C. WELTHAGEN TECHNICAL SPECIALIST		 N. VILOJEN 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 S/18-1639X

Equipment: GR Terminal Box

(Expiry date: 30 April 2027)

Page 2 of 2

ANNEX A

This document is based on and must be read in conjunction with certificate IECEx CML 17.0144X.							
Description (According to Base Certificate) **							
"Refer to description in Base Certificate ** (and any applicable schedules/issues/variatioins)."							
Issue	Issue 1: Supplemented for changes to manufacturing address. Issue 2: Supplemented for review as per ARP 0108. Issue 3: Supplemented for review as per ARP 0108.						
Standard compliance	See Base Certificate **						
Special conditions of safe use ("X")	<ul style="list-style-type: none">When fitted with the fibre optic splice tray, the fibre cables shall be sufficiently supported so as to prevent strain and their minimum bend radius shall be observed and all fibre connectors shall have dust covers fitted if not used.						
Conditions of manufacture	<ul style="list-style-type: none">Where the product incorporates certified parts or safety critical components, the manufacturer of the product defined on this certificate shall continually monitor these parts/components for any modifications introduced by the manufacturer(s) of these constituent parts. If the manufacturer of any constituent part introduces any changes which affect the compliance of the certified product that is the subject of this certificate, the manufacturer is required to have this certificate updated.When terminals are supplied with the enclosure, they shall be ATEX/IECEx approved components as specified in the scheduled drawings and having a maximum insulation temperature as below. All terminals shall be installed in accordance with their Conditions of Safe Use/Schedule of Limitations/Conditions of Certification and the relevant codes of practice/wiring regulations, specifically to the minimum creepage and clearance requirements and to any limitations to ratings that may be observed due to method of installation. Terminals shall have a minimum insulation temperature as per the table below <table border="1"><tr><td>Ta= +40°C</td><td>Ta= +55°C</td><td>Ta= +65°C</td></tr><tr><td>≥80°C</td><td>≥95°C</td><td>≥105°C</td></tr></table> All terminals fitted shall be suitable for the lower operating temperature marked on the certification label. <ul style="list-style-type: none">The lower ambient temperature shall be de-rated according to the minimum temperature limitations of the components fitted to the enclosure.Where multiple enclosures are mounted together, instructions described in the manufacturer's drawings shall be followed.	Ta= +40°C	Ta= +55°C	Ta= +65°C	≥80°C	≥95°C	≥105°C
Ta= +40°C	Ta= +55°C	Ta= +65°C					
≥80°C	≥95°C	≥105°C					
Conditions of Certification	<ul style="list-style-type: none">This IA Certificate covers all units sold from the date of this document to the expiry date of this certificate.As per ARP 0108 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 (or regulations), 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:	<ul style="list-style-type: none">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 17.0144X	Page 1 of 5	<u>Certificate history:</u>
Status:	Current	Issue No: 4	Issue 3 (2021-09-12)
Date of Issue:	2023-11-03		Issue 2 (2021-01-05)
Applicant:	Pepperl+Fuchs SE Lilienthalstrasse 200 68307 Mannheim Germany		Issue 1 (2018-08-01)
Equipment:	GR Terminal Box		Issue 0 (2018-05-29)
Optional accessory:			
Type of Protection:	Increased Safety "eb", Intrinsic Safety "ia", Optical Radiation "op pr", Dust Ignition "tb"		
Marking:	Ex eb IIC T* Gb Ex ia IIC T* Gb Ex op pr IIC T6 Gb Ex eb ia IIC T* Gb Ex eb op pr IIC T* Gb Ex ia op pr IIC T* Gb Ex eb ia op pr IIC T* Gb Ex tb IIIC T**°C Db		
	‘#’ Lower ambient is dependant upon components fitted but shall be no less than -60°C ‘**’ Refer to description for T classes		

Approved for issue on behalf of the IECEx
Certification Body:

L A Brisk

Position:

Assistant 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 17.0144X**

Page 2 of 5

Date of issue: 2023-11-03

Issue No: 4

Manufacturer: **Pepperl+Fuchs SE**
Lilienthalstrasse 200
68307 Mannheim
Germany

Manufacturing locations: **Pepperl+Fuchs SE**
Bussmatten 10-12
77815 Buehl/Baden
Germany

Pepperl + Fuchs (Australia) Pty Ltd
131-149 Link Drive
Campbellfield Vic 3061
Australia

**Pepperl+Fuchs (Shanghai)
Automation Engineering Co., Ltd.**
Nr. 269, Yuanzhong Rd., Huinan Town,
Pudong District, Shanghai, 201399
China

See following pages for more 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 60079-28:2015](#) Explosive atmospheres - Part 28: Protection of equipment and transmission systems using optical radiation
Edition:2

[IEC 60079-31:2022](#) Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure "t"
Edition:3.0

[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 Reports:

[GB/CML/ExTR17.0174/00](#)
[GB/CML/ExTR21.0185/00](#)

[GB/CML/ExTR17.0174/01](#)
[GB/CML/ExTR23.0277/00](#)

[GB/CML/ExTR20.0239/00](#)

Quality Assessment Reports:

[DE/PTB/QAR06.0015/19](#)

[FR/INE/QAR12.0003/11](#)

[US/UL/QAR07.0005/18](#)



IECEX Certificate of Conformity

Certificate No.: **IECEX CML 17.0144X**

Page 3 of 5

Date of issue: 2023-11-03

Issue No: 4

EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

The GR Terminal Box is a range of increased safety, black, anti-static, glass-fibre reinforced polyester enclosures with a base and screw-down cover (with optional hinges in addition to the fixing screws). The range utilises the Ex Component certified Pepperl+Fuchs GR enclosures covered under certificate numbers IECEx CML 17.0039U and CML 17ATEX3084U.

See Annex for full description and Conditions of Manufacture.

SPECIFIC CONDITIONS OF USE: YES as shown below:

See Annex for Specific Conditions of Use.



IECEX Certificate of Conformity

Certificate No.: **IECEX CML 17.0144X**

Page 4 of 5

Date of issue: 2023-11-03

Issue No: 4

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

Issue 1

This issue introduced the following changes:

1. Dust surface temperatures were changed from T85, T100, T135 to T80, T95, T130

Issue 2

This issue introduced the following changes:

1. Change of applicant
2. Update of QAR
3. Update of the manufacturing locations

Issue 3

This issue introduced the following changes:

1. To update the certificate to the latest editions of the standards.

Issue 4

This issue introduced the following changes:

1. To assess the thermal effects of various mounting configurations
2. To update to the latest version of standard: IEC 60079-31:2022 Ed 3.0



IECEX Certificate of Conformity

Certificate No.: **IECEX CML 17.0144X**

Page 5 of 5

Date of issue: 2023-11-03

Issue No: 4

Additional manufacturing locations:

**Pepperl & Fuchs Manufacturing (India)
Private Limited**
Plot No. A-13
Sipcot Industrial Growth centre
ORAGADAM TAMIL NADU 602105
India

Pepperl+Fuchs srl
Via Galileo Galilei, 1B/B1
I-20875 burago di Molgora (MB)
Italy

Pepperl+Fuchs Manufacturing Inc.
502 Cane Island Parkway, Katy, TX 77494
United States of America

Annex:

[Certificate Annex IECEx CML17.0144X, Issue 4.pdf](#)

Annex to: IECEx CML17.0144X, Issue 4

Apparatus: GR Terminal Box

Applicant: Pepperl+Fuchs GmbH



Description

The GR Terminal Box is a range of increased safety, black, anti-static, glass-fibre reinforced polyester enclosures with a base and screw-down cover (with optional hinges in addition to the fixing screws). The range utilises the Ex-Component certified Pepperl+Fuchs GR enclosures covered under certificate numbers IECEx CML 17.0039U and CML 17ATEX3084U.

The terminal boxes are populated with DIN rail mounted, increased safety Ex Component certified terminals.

For cable entry, the terminal boxes may be provided with clearance holes, as required, machined into the top, bottom, left and right faces.

An internal/external earth stud may be provided.

The enclosures may be flanged to each other to create one larger enclosure with an allowed dissipation corresponding to the new larger dimensions and they may be flanged to separately certified Ex d enclosures. A method for calculating the required reduction in allowed dissipated power to account for any heating from the neighbouring Ex d enclosures is described in this certificate.

The enclosures are available in a range of standard sizes as shown in the table below, intermediate sizes are also permitted.

Enclosure type	MDP	Height	Width	Depth
GR.*.10.10.07*	3.2 W	100 mm	100 mm	65 mm
GR.*.13.13.09*	6.7 W	130 mm	130 mm	85 mm
GR.*.13.18.09*	11 W	130 mm	180 mm	91.5 mm
GR.*.18.18.10*	14 W	180 mm	180 mm	104 mm
GR.*.18.24.10*	17 W	180 mm	240 mm	104 mm
GR.*.18.36.10*	22 W	180 mm	360 mm	104 mm
GR.*.18.36.17*	27 W	180 mm	360 mm	166.5 mm
GR.*.36.36.10*	33 W	360 mm	360 mm	104 mm
GR.*.36.36.17*	39 W	360 mm	360 mm	166.5 mm
GR.*.36.36.24*	44 W	360 mm	360 mm	241.5 mm
GR.*.48.60.24*	72 W	480 mm	600 mm	241.5 mm
GR.*.36.72.17*	104 W	360 mm	720 mm	166.5 mm
GR.*.36.72.24*	104 W	360 mm	720 mm	241.5 mm

The maximum dissipated power (MDP) in the table above was derived with the terminals used at 60% of their rated current value.



Certificate Annex IECEx
Version: 10.0 Approval: Approved



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





The MDP is valid for the following ambient temperatures and temperature classes:

Ta 40°C T6 T80°C

Ta 55°C T5 T95°C

Ta 65°C T4 T130°C

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 of the product defined on this certificate shall continually monitor these parts/components for any modifications introduced by the manufacturer(s) of these constituent parts. If the manufacturer of any constituent part introduces any changes which affect the compliance of the certified product that is the subject of this certificate, the manufacturer is required to have this certificate updated.
- ii. When terminals are supplied with the enclosure they shall be ATEX/IECEX approved components as specified in the scheduled drawings and having a maximum insulation temperature as below. All terminals shall be installed in accordance with their Conditions of Safe Use/Schedule of Limitations/Conditions of Certification and the relevant codes of practice/wiring regulations, specifically to the minimum creepage and clearance requirements and to any limitations to ratings that may be observed due to method of installation.

Terminals shall have a minimum insulation temperature as per the table below

Ta = +40°C	Ta = +55°C	Ta = + 65°C
≥80°C	≥95°C	≥105°C

All terminals fitted shall be suitable for the lower operating temperature marked on the certification label.

- iii. The lower ambient temperature shall be de-rated according to the minimum temperature limitations of the components fitted to the enclosure.
- iv. Where multiple enclosures are mounted together, instructions described in the manufacturer's drawings shall be followed.

Specific Conditions of Use

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

- i. When fitted with the fibre optic splice tray, the fibre cables shall be sufficiently supported so as to prevent strain and their minimum bend radius shall be observed and all fibre connectors shall have dust covers fitted if not used.

Components used which are covered by Ex Certificates issued to older editions of Standards

None.



Certificate Annex IECEX
Version: 10.0 Approval: Approved



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