



Issue Date: 15 August 2018
Expiry Date: 09 July 2021

IA Certificate Number: **MASC S/18-1639X**
Our ref: 18-1639 S1

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IA – CERTIFICATE

(IN TERMS OF REGULATION 21.17.2 OF THE MINERALS ACT (INCORPORATION THE MINE HEALTH AND SAFETY ACT) AND REGULATION 9 (1) OF THE ELECTRICAL MACHINERY REGULATIONS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT)

GR Terminal Box

(Supplement One: Supplemented for changes to Manufacturing address)

This document is based on and must be read in conjunction with IECEX CML 17.0144X certificate.

Further to your request, we have evaluated the supplied documentation.

The following is applicable:

Description	Detail
Requested By :	Pepperl+Fuchs (Pty) Ltd Lilienthalstrasse 200, 68307 Mannheim, Germany
Equipment :	Terminal Box
Manufacturer :	Pepperl+Fuchs GmbH Geschäftsbereich, Werk Bühl/Baden, Bußmatten 10-12, 77815 Bühl, Germany
Additional Manufacturing location:	These products may only be manufactured at any Pepperl+Fuchs, facility that has been audited for the manufacture of the type of protection defined on this certificate; in addition, the site must also be listed on the Quality Assessment Reports mentioned below.
Model(s) / Type(s) :	GR
Rating :	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
Certification body :	Certification Management Limited (CML)
Type Certificate No :	IECEX CML 17.0144X
Variations/Issue/Amendment :	0
Assessment Report No :	GB/CML/ExTR17.0174/00
Quality Assurance report (QAR) / Notification (QAN) :	DE/PTB/QAR06.0015/09 DE/PTB/QAR16.0002/00 FR/INE/QAR12.0003/05 US/UL/QAR07.0005/12

/ Standards...

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Standards:	- IEC 60079-0	(2011)	“General requirements”
	- IEC 60079-11	(2011)	“Equipment protection by intrinsic safety ‘i’”
	- IEC 60079-28	(2015)	“Protection of equipment and transmission systems using optical radiation”
	- IEC 60079-31	(2013)	“Equipment dust ignition protection by enclosures ‘t’”
	- IEC 60079-7	(2015)	“Equipment protection by increased safety ‘e’”

The evaluation was conducted according to the requirements of:

- **SANS (IEC) 60079-0 : 2012 “Explosive atmospheres – Part 0: Equipment — General requirements”**
- **SANS (IEC) 60079-11 : 2012 “Explosive atmospheres – Part 11: Equipment protection by intrinsic safety ‘i’”**
- **SANS (IEC) 60079-28 : 2015 “Explosive atmospheres – Part 28: Protection of equipment and transmission systems using optical radiation”**
- **SANS (IEC) 60079-31 : 2014 “Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosures ‘t’”**
- **SANS (IEC) 60079-7 : 2015 “Explosive atmospheres – Part 7: Equipment protection by increased safety ‘e’”**

COMPLIANCE:

The equipment as described below is hereby certified “Explosion Protected” “(See Rating)” and is suitable for use in hazardous locations as stated below and as tested, assessed and inspected in accordance with the relevant requirements of SANS / IEC Standards:

Location	Zone 0, 1, 2 Zone 20, 21, 22	Gas Surface (As applicable) Dust
Hazard Frequency	---	Intermittent as could occur under normal operating conditions in hazardous area
Environment	Group IIC Group IIIC	Propane to Hydrogen/Acetylene Conductive dust
Service/Ambient Temperature	(As Applicable)	“See Description”

DESCRIPTION OF EQUIPMENT (According to CML Certificate):

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...

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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 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

Enclosure type	MDP	Height	Width	Depth
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.

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

T_a 40°C T6 T85°C

T_a 55°C T5 T100°C

T_a 65°C T4 T135°C

MARKING:

CML marking remains applicable and the marking for the relevant models will be as above. The following MASC Certificate number (IA number) must be additionally applied to the equipment.

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CONDITION OF CERTIFICATION: CONDITIONS OF MANUFACTURE:

The following are conditions of manufacture

1. 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.
2. 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...

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(Supplement One)

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

$T_a = +40^{\circ}\text{C}$	$T_a = +55^{\circ}\text{C}$	$T_a = + 65^{\circ}\text{C}$
$\geq 80^{\circ}\text{C}$	$\geq 95^{\circ}\text{C}$	$\geq 105^{\circ}\text{C}$

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

3. The lower ambient temperature shall be de-rated according to the minimum temperature limitations of the components fitted to the enclosure.

CONDITION OF SAFE USE (X):

1. 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 CERTIFICATION:

1. This IA Certificate covers all units sold from the date of this document to 09 July 2021.
2. As per ARP 0108 a three yearly review is required on this IA Certificate.
3. The apparatus must be additionally marked with the MASC marking details above.
4. 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.
5. The equipment does not need to be re-tested when used on the conditions and with such restrictions as prescribed by CML and in this approval.
6. The CML certification must remain valid.
7. The extent of the requirements in the ARP 0108 (or regulations) and SANS 10108 on the certification of the equipment must remain unchanged.
8. The Ex quality assurance notification/report for the equipment must remain valid.

The use of apparatus in hazardous locations is subject to the following provisions as applicable, which shall be adhered to:

- i. SANS 10086 requirements;
- ii. Any conditions mentioned in the above document;
- iii. Codes of Practice enforced in terms of Regulations 21.17.2 of Minerals Act, by Chief Inspector of Mines;
- iv. Any restrictions and conditions enforced by Chief Inspectors of Mines, Principal Inspector (Group I equipment) of Chief Inspector of Factories (Group II equipment);
- v. Any relevant requirements of the MHS Act or the OHS Act.

/ . CONCLUSION...

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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 by CML.

The routine tests for production units according to the CML Certificate must be complied with (if applicable).

Yours faithfully



**A. Koekemoer
TECHNICAL SPECIALIST**

Mining And Surface Certification

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 is representative and accurately performed, and that a report is accurate in the quoted results and conclusions drawn from the test / assessment, MASC or its members/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 issued pursuant to a test / assessment.

MASC takes no responsibility for any non-conformances, exclusions or any results / assessments not in compliance with the standards. By marking the equipment in accordance with the documentation / standard, the manufacturer attests on his own responsibility that the equipment has been constructed in accordance with the applicable requirements of the relevant standards and that the routine verifications and routine tests have been successfully completed and the product 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 practises.

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