



Mining And Surface Certification (Pty) Ltd

2015/021934/07



Issue Date: 08 January 2018
Expiry Date: 08 January 2021

IA Certificate Number: **MASC S/18-0004X**
Our ref: 18-0004

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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)

FXL/XL/SL Range of Terminal Enclosures

This document is based on and must be read in conjunction with IECEx CML 16.0007X certificate.
Further to your request, we have evaluated the supplied documentation.

The following is applicable:

Description	Detail
Requested By :	Pepperl+Fuchs (Pty) Ltd 1st fl Zerwick Forum, 8 Glen Eagle Office Park, Cnr Monument Rd and Braambos St, Glen Erasmia, Kempton Park 1619, South Africa
Equipment :	Terminal Enclosures
Manufacturer :	Pepperl+Fuchs GmbH Lilienthalstrasse 200, 68307 Mannheim , Germany
Additional Manufacturing location:	Pepperl+Fuchs GmbH Geschäftsbereich, Werk Bühl / Baden Bußmatten, 10-12, 77815 Bühl, Germany
	Pepperl+Fuchs Manufacturing UK Ltd Unit 8-9, Woden Road West The Woodbank Trading Estate, Wednesbury West, Midlands, WS10 7SU, United Kingdom
	Pepperl+Fuchs (Aust) Pty Ltd 131-149 Link Drive, Campbellfield, Victoria, 3061, Australia
	Pepperl+Fuchs Inc. 1600 Enterprise Parkway, Twinsburg, Ohio, 44087, United States of America
	Pepperl+Fuchs (Manufacturing) Pte Ltd P+F Building 18, Ayer rajah Crescent, Singapore, 139942, Singapore
	Pepperl & Fuchs Inc. 4333 West Sam, Houston Parkway, North Suite 150, Houston, TX 77043, United States of America
	PT. Pepperl + Fuchs SD 56, 57 Lobam, Bintan Industrial Estate, IND-Pulau Bintan, Riau, Indonesia

/ . Model(s)...

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IA CERTIFICATE NUMBER: MASC S/18-0004X
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Model(s) / Type(s) :	FXL/XL/SL Range	
Rating :	Ex ia IIC T* Ga or Ex eb IIC T* Gb or Ex tb IIIC T**°C Db or 50°C up to +120°C (See Description) Ex tb IIIC T**°C Db -5°C up to +50°C (See Description)	
Certification body :	Certification Management Limited (CML)	
Type Certificate No :	IECEX CML 16.0007X	
Variations/Issue/Amendment :	0	
Assessment Report No :	GB/CML/ExTR16.0067/00	
Quality Assurance report (QAR) / Notification (QAN) :	AU/TSA/QAR06.0004/06 DE/PTB/QAR06.0015/09 GB/SIR/QAR07.0004/01	DE/PTB/QAR06.0008/08 DE/PTB/QAR10.0008/02 US/UL/QAR07.0005/12

Standards:	- IEC 60079-0	(2011)	“General requirements”
	- IEC 60079-1	(2014)	“Equipment protection by flameproof enclosures ‘d’”
	- IEC 60079-7	(2015)	“Equipment protection by increased safety ‘e’”
	- IEC 60079-11	(2011)	“Equipment protection by intrinsic safety ‘i’”
	- IEC 60079-31	(2013)	“Equipment dust ignition protection by enclosures ‘t’”

The evaluation was conducted according to the requirements of:

- **SANS (IEC) 60079-0 : 2012** “Explosive atmospheres – Part 0: Equipment — General requirements”
- **SANS (IEC) 60079-1 : 2014** “Electrical apparatus for explosive gas atmospheres – Part 1: Equipment protection by flameproof enclosures ‘d’”
- **SANS (IEC) 60079-7 : 2015** “Explosive atmospheres – Part 7: Equipment protection by increased safety ‘e’”
- **SANS (IEC) 60079-11 : 2012** “Explosive atmospheres – Part 11: Equipment protection by intrinsic safety ‘i’”
- **SANS (IEC) 60079-31 : 2014** “Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosures ‘t’”

COMPLIANCE:

The equipment as described below is hereby certified “Explosion Protected” “See Marking” 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...

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Location	Zone 1 & 2	Gas/Dust Surface
Hazard Frequency	---	Intermittent as could occur under normal operating conditions in hazardous area
Environment	Group IIC Group IIIC	Propane to Hydrogen/Acetylene Conductive dust
Surface Temperature	T6 T3	(As Applicable)
Service/Ambient Temperature	"See Marking"	(As Applicable)

DESCRIPTION OF EQUIPMENT (According to CML Certificate):

The FXL/XL/SL are a range of increased safety terminal enclosures. They comprise a metallic enclosure component certified to Sira 00ATEX3027U / IECEx SIR 06.0073U, fitted with separately certified terminals, plug and socket connectors (DXN1, DXN3 or DXN6), earthing busbar assembly (SH2S) and isolation terminal (type MFT). A selection of Kraus & Naimer switches may be fitted in a dust application only.

The SL range utilises a bolt on cover and is available in stainless steel (SLS) or mild steel (SLM).

All enclosures may be supplied with a flange adaptor as part of the enclosure component certification. When fitted with these adaptors all ranges may be close coupled to a separately certified increased safety or flameproof enclosure.

All enclosure types and sizes from the range may be fitted with DIN rail mounted separately certified terminals and/or earthing busbar assembly (SH2S).

Isolation terminal (type MFT) may be fitted in any size enclosure from the XL range, FXL range or SL range. They may be fitted alongside other components.

Enclosures sizes 306 mm x 306 mm x 160 mm and above from any enclosure type may be fitted with separately certified plug and socket connectors (DXN1, DXN3 or DXN6). These connectors may be installed to three of the four sides of the enclosure, with a maximum of two connectors per side.

A selection of Kraus & Naimer switches may be fitted to all enclosure types and sizes. When switches are fitted certification is limited to dust applications only. The switches may be mounted on DIN rails, backing plate or cover mounted (through enclosure cover). Switches may be mounted alongside other components but will limit all equipment to dust application only.

Only items from the Pepperl+Fuchs approved range may be fitted. Before they are installed the maximum power dissipation must be calculated in accordance with IEC (SANS) 60079-7 and shall not exceed the values given in the table below:

/ Enclosure...

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Enclosure			Maximum Power Dissipation (W) T6/T80°C (-50°C to +40°C) T5/T95°C (-50°C to +55°C) T4/T130°C (-50°C to +85°C) T3/T160°C (-50°C to +120°C)
Range	Type	Size (LxWxH)	
FXL Range & XL Range	FXL*1 & XL*1	229x152x130	15
	FXL*2 & XL*2	260x260x150	15
	FXL*2D & XL*2D	260x260x200	15
	FXL*3 & XL*3	306x306x150	21
	FXL*3D & XL*3D	306x306x200	21
	FXL*4 & XL*4	380x260x150	15
	FXL*4D & XL*4D	380x260x200	15
	FXL*5 & XL*5	458x382x150	29
	FXL*5D & XL*5D	458x382x200	29
	FXL*6 & XL*6	480x480x150	30
	FXL*6D & XL*6D	480x480x200	30
	FXL*7 & XL*7	500x350x150	21
	FXL*7D & XL*7D	500x350x200	21
	FXL*8 & XL*8	620x450x150	30
	FXL*8D & XL*8D	620x450x200	30
	FXL*9 & XL*9	762x508x150	41.7
	FXL*9D & XL*9D	762x508x200	41.7
	FXL*10 & XL*10	914x610x200	93.4
	FXL*10D & XL*10D	914x610x300	93.4
	FXL*11 & XL*11	1177x777x210	100
FXL*11D & XL*11D	1177x777x300	100	
FXL*11S & XL*11S	>1177x>777x>210	100	
SL Range	SL*1	110x110x65	9
	SL*2	120x120x80	9
	SL*3	150x120x80	9
	SL*4	150x150x90	11
	SL*5	190x150x90	11
	SL*6	190x190x100	13

Enclosures may also be manufactured to sizes not specified in this table provided that any given dimension is not larger than the respective dimension of the largest enclosure or smaller than the respective dimension of the smallest enclosure. The power rating applied to an enclosure of intermediate size is that of the next smallest enclosure.

/ . MARKING...

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MARKING:

CML marking remains applicable and the marking for the relevant models will be as above.

Ex ia IIC T* Ga	* T6, T5, T4 or T3
Ta= -50°C up to +120°C	
Ex eb IIC T* Gb	
Ex db eb IIC T* Gb	*T6, T5, T4 or T3
Ex tb IIIC T**°C Db	** T80°C, T95°C, T130°C or T160°C
Ta= -50°C up to +120°C	
Ex tb IIIC T80°C/T95°C Db	
Ta= -5°C up to +40°C/+50°C	

T-class and assigned maximum surface temperature are dependent on the enclosure, the equipment fitted and the power dissipation, as well as the upper ambient temperature assigned. Above stated ambient ranges are maximum values and individual models may be marked with a reduced range, depending on parts fitted and Temperature class.

The following MASC Certificate number (IA number) must be additionally applied to the equipment.

IA No: MASC S/18-0004X

CONDITIONS OF MANUFACTURE:

- As per original certificate IECEx CML 16.0007X

SPECIAL CONDITIONS OF USE (X):

1. Enclosures that are fitted with the Marechal Type DXN1 socket (as stated in document 16- 1242CM-04) must be protected from impact greater than 4 Joules.
2. Equipment fitted with warning 'POTENTIAL ELECTROSTATIC CHARGING HAZARD' shall only be cleaned with a damp cloth to prevent the risk of electrostatic discharge.
3. When equipment is fitted with a flange adaptor it must be installed in line with manufactures instructions DOCT-5152.
4. KG / C type switches should only be installed where protection from direct exposure to UV light is provided.

CONDITIONS OF CERTIFICATION:

1. This IA Certificate covers all units sold from the date of this document to 08 January 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...

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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:

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



F du Toit
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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