



Mining And Surface Certification (Pty) Ltd

2015/021934/07



Certificate Number: MASC MS/17-0866
Issue: 6 August 021
Expire: 23 July 2024
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IA – CERTIFICATE

(Supplement 1: Reviewed by MASC as per ARP 0108)

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

Ex – Type Examination

Certificate number:

Equipment:

Serial No:

MASC MS/17-0866

Isolation Amplifier type KFD0-RO-EX2. **
(See “Conditions of Certification”)

Requested by:

Address:

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

Manufacturer:

Address:

Pepperl+Fuchs SE
Lilienthalstrasse 200
68307 Mannheim
Germany

DESCRIPTION:

Isolation Amplifier type KFD0-RO-EX2. **

Instead of the asterisks in the complete name letters and/or numerals will be inserted characterizing different variations, which have no influence on the explosion protection of the apparatus.

The Isolation Amplifier serves for the transmission of switching commands from the non-hazardous area to the hazardous area. The Isolation Amplifier is an associated apparatus and has to be mounted outside the hazardous area. Its pcb is mounted in a plastic box; which has terminals for the connection of the intrinsic safe and the non-intrinsic safe circuits in the head part of the box.

Ratings

Non-intrinsically safe circuits

Nominal voltage DC 20...30 V

Maximum voltage U_m DC 40 V

/ . Potential...

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Potential free relay contact circuits

(Terminals 1, 2 and 3 and 4, 5 and 6)

Each for the connection of an intrinsically safe circuit in level of protection ia or ib with the following maximum values:

Maximum input voltage	U _i	60 V
Maximum input current	I _i	2 A
Effective internal inductance	L _i	negligible
Effective internal capacitance	C _i	negligible

MARKING:

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

IA No: MASC MS/17-0866

COMPLIANCE:

The equipment as described above and in MASC letter 17-0866 is hereby certified "Explosion Protected" [Ex ia Ga] IIC, [Ex iaD], [Ex ia] I 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:

The evaluation was conducted according to the requirements of:

- i) **SANS (IEC) 60079-0 : 2012 "Explosive atmospheres – Part 0: Equipment — General requirements"**
- ii) **SANS (IEC) 60079-11 : 2012 "Explosive atmospheres – Part 11: Equipment protection by intrinsic safety 'i'"**

Location	Zone *0, 1 & 2 Zone *20, 21 & 22	Gas Surface / Mining (As Applicable) Dust (As Applicable)
Hazard Frequency	---	Continuous as could occur under normal operating conditions in hazardous area (*Outputs only)
Environment	Group I Group IIC	Methane and Coal dust (As Applicable) Propane to Hydrogen / Acetylene (As Applicable)
Service/Ambient Temperature	-20°C to +40°C	

/ . 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.

CONDITIONS OF MANUFACTURE:

- None

SPECIAL CONDITIONS OF USE (X):

- None

CONDITIONS OF CERTIFICATION:

1. This Certificate remains valid based on a three yearly review covered by an official MASC letter.
2. The apparatus must be additionally marked with the MASC marking details above.
3. 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.
4. The equipment does not need to be re-tested when used on the conditions and with such restrictions as prescribed by DEKRA and in this approval.
5. The DEKRA certification must remain valid.
6. The extent of the requirements in the ARP 0108 (or regulations) and SANS 10108 on the certification of the equipment must remain unchanged.
7. The Ex quality assurance notification/report for the equipment must remain valid.



D.P Visser
TECHNICAL SPECIALIST



N Viljoen
TECHNICAL OFFICER

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 practices.

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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

Tell: 012 653 2959 ♦ Fax: 086 605 8568

e-mail: info@masc-ex.co.za