



Mining And Surface Certification (Pty) Ltd

2015/021934/07



Certificate Number: MASC S/17-0867
Issue: 27 March 2023
Expire: 27 March 2026
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IA – CERTIFICATE

(Supplement 2 - Review required 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 S/17-0867

SMART-Isolating Transformer KFD0-SCS-Ex1.55
(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
Königsberger Allee 87,
68307 Mannheim
Germany

DESCRIPTION:

The SMART-Isolating Transformer, Type KFD0-SCS-Ex1.55 is preferably used as passive supply and isolating unit for 2-wire measuring transducers or as isolating transformer for 4 ... 20mA signal circuits. It is installed outside of hazardous areas.

The permissible temperature range is -20°C up to +60°C.

Electrical data:

Input circuit..... Operating values;
(terminals 8- , 9+)

U = 30V

I = 22 mA

U_m = 253 V

Output circuits..... type of protection Intrinsic Safety Ex ib IIC
(terminals 1+, 2, 3-)

U_o = 23.1 V

I_o = 28 mA

P_o = 647 mW

Rectangular characteristic

C_i = negligibly low

L_i = negligibly low

/. The assignment...

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Mining And Surface Certification (Pty) Ltd Reg No: 2015/021934/07

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The assignment of explosion group and external capacitances and inductances is shown in the following table:

The assignment of explosion group and external capacitances and inductances is shown in the following table:

	Ex ib IIC				Ex ib IIB		
C _o	76 nF	97 nF	130 nF	140 nF	460 nF	520 nF	940 nF
L _o	1 mH	0.5 mH	0.2 mH	0.1 mH	10 mH	1 mH	0.1 mH

The values have been calculated using the ISPARK-Program, version 6.2 and apply to the simultaneous occurrence of both types of reactances.

The input circuit is safely electrically isolated from the output circuit up to a peak value of the nominal voltage of 375V.

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COMPLIANCE:

The equipment as described above and in MASC letter 17-0867 – R2 is hereby certified “Explosion Protected” [Ex ib] IIC 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 *1 & 2	Gas Surface / Mining (As Applicable)
Hazard Frequency	---	Intermittent as could occur under normal operating conditions in hazardous area (*Outputs only)
Environment	Group IIC	Propane to Hydrogen / Acetylene (As Applicable)
Service/Ambient Temperature	-20°C to +60°C	

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...

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CONDITIONS OF MANUFACTURE:

- None

SPECIAL CONDITIONS OF USE (X):

- None

CONDITIONS OF CERTIFICATION:

1. This Certificate remains valid based of the QAR/QAN and no more than 3 years.
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 PTB and in this approval.
5. The PTB 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.



S. Jordaan
TECHNICAL SPECIALIST



C. Welthagen
TECHNICAL SPECIALIST

Mining And Surface Certification

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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).

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