

# Certification of

# EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

ANZEx Scheme

## Certificate of Conformity

Certificate No: **ANZEx 11.2009** Issue: **0 16 December 2011** Original Issue

Applicant: **Pepperl+Fuchs GmbH**  
**Lilienthalstrasse 200**  
**68307 Mannheim**  
**GERMANY**

Electrical Equipment: **Isolation Switching Amplifier Type K\*A\*-SR\*-Ex\*.W.\***

Type of Protection and Marking Code: **[Ex ia] I**  
**-20 °C ≤ Ta ≤ +60 °C**  
**ANZEx 11.2009**

Manufactured by: **Pepperl+Fuchs GmbH** **Pepperl+Fuchs Pte Ltd**  
**Lilienthalstrasse 200** **18 Ayer Rajah Crescent**  
**68307 Mannheim** **P+F Building**  
**GERMANY** **SINGAPORE 139942**

The certification database located at <http://www.anzex.com.au> shows the currency of this certificate.

Issued by:



**Safety in Mines, Testing and Research Station**  
2 Smith Street, REDBANK QLD 4301, Australia  
Postal Address: PO Box 467, GOODNA QLD 4300, Australia  
Phone: + 61 7 3810 6381 Fax: + 61 7 3810 6366



[www.jas-anz.org/register](http://www.jas-anz.org/register)

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This certificate is granted subject to the conditions as set out in Standards Australia/Standards New Zealand P-008 Ex Mark Management Committee Publication MP87.1.

The electrical apparatus 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: 2007**                      **Explosive atmospheres**  
**Part 0: Equipment – General requirements**

**IEC 60079-11: 2006**                      **Explosive atmospheres**  
**Part 11: Equipment protection by intrinsic safety “i”**

This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.

The equipment listed has successfully met the examination and test requirements as recorded in

Test Report No. and Issuing Body:    **DE/PTB/ExTR11.0048/00; PTB**

Quality Assessment Report No. and Issuing Body:    **DE/PTB/QAR06.0007/02, DE/PTB/QAR06.0008/02; PTB**

File Reference:                              **11/0120**



Signed for and on behalf of issuing authority

**Principal Engineer - Certification**  
**Engineering, Testing and Certification Centre**

Position

**16 December 2011**

Date of issue

This certificate is not transferable, remains the property of the issuing body and must be returned in the event of its being revoked or not renewed.

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## Schedule

Equipment:

The equipment is designed to restrict the transfer of energy from unspecified non-hazardous area apparatus to intrinsically safe circuits located in a hazardous area. It also provided galvanic isolation between the hazardous area and non-hazardous area circuits.

The following models are covered by this certificate:

KFA4-SR2-Ex1.W\*, KFA4-SR2-Ex1.W.LB\*, KFA4-SR2-Ex2.W\*, KFA4-SR2-Ex2.W.IR\*  
KFA5-SR2-Ex1.W\*, KFA5-SR2-Ex1.W.LB\*, KFA5-SR2-Ex2.W\*, KFA5-SR2-Ex2.W.IR\*  
KFA6-SR2-Ex1.W\*, KFA6-SR2-Ex1.W.LB\*, KFA6-SR2-Ex2.W\*, KFA6-SR2-Ex2.W.IR\*

“\*” represents alpha numeric signs (e.g.-Y1). These signs are used to describe different versions of a module. These differences do not affect intrinsic safety.

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Drawings:

Drawing No.	Drawing Title	Revision No.	Drawn/ Revision Date
16-316PT-01A (Sheets 7 to 9 of 14)	PTB-ATEX Umschreibung K*A*-SR*-Ex*.W.*	-	-
16-316PT-08	ATEX – Antragszeichnung KFA*-SR2-EX*.* IS-block diagram	-	07.02.01
16-316PT-09 (2 Sheets)	ATEX – Antragszeichnung KFA*-SR2-EX*.* Schematics	-	07.02.01
16-316PT-10	ATEX – Antragszeichnung KFA*-SR2-EX*.* Assembly drawing side B	-	9/2/01
16-316PT-11 (Sheet 1 of 2)	ATEX – Antragszeichnung KFA*-SR2-EX*.* Copper layout side B	-	9/2/01
16-316PT-11 (Sheet 2 of 2)	ATEX – Antragszeichnung KFA*-SR2-EX*.* Copper layout side A	-	-
16-503PT-04 (10 Sheets)	Mechanical parts 2nd Supplement to PTB 00 ATEX 2081	-	2011-Apr-12
16-503PT-06 (2 Sheets)	Transformer 2nd Supplement to PTB 00 ATEX 2081	-	2011-Apr-12
16-503PT-09 (4 Sheets)	Instructions 2nd Supplement to PTB 00 ATEX 2081	-	2011-Apr-12
16-0503SI-10 (2 Sheets)	Type Label KFA*-SR2-EX*.W*	-	2011-Dec-14

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## Additional Information:

**Output circuit terminals 7, 8, 9 or 10, 11, 12:**

**Um ≤ 253V AC**

**Power supply terminals 14 and 15:**

**230V AC±10% Um = 253V AC (KFA6-...)**

**115V AC±10% Um = 126.5V AC (KFA5-...)**

**100V AC±10% Um = 110V AC (KFA4-...)**

**Hazardous area terminals 1, 2, 3 or 4, 5, 6:**

**1. Maximum values for each circuit:**

**U<sub>0</sub> = 10.6 V**

**I<sub>0</sub> = 19.1 mA**

**P<sub>0</sub> = 51 mW (linear characteristic)**

**C<sub>i</sub> = negligible**

**L<sub>i</sub> = negligible**

The capacitance and the inductance of the load connected to the output terminals of the equipment must not exceed the following values.

Group	Maximum permissible external capacitance Co	Maximum permissible external inductance Lo
I	63 µF	1000 mH

In the presence of lumped capacitances and inductances greater than 1% of above value (excluding the cable) in the intrinsically safe input circuits, the maximum permissible external capacitances and inductances are to be taken from the following table.

Group	Maximum permissible external capacitance Co	Maximum permissible external inductance Lo
I	5.1 µF	20 mH

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## 2. Maximum values when both intrinsically safe circuits are connected in parallel:

$U_0 = 10.6 \text{ V}$   
 $I_0 = 38.2 \text{ mA}$   
 $P_0 = 102 \text{ mW}$  (linear characteristic)  
 $C_i = \text{negligible}$   
 $L_i = \text{negligible}$

The capacitance and the inductance of the load connected to the output terminals of the equipment must not exceed the following values.

Group	Maximum permissible external capacitance $C_0$	Maximum permissible external inductance $L_0$
I	63 $\mu\text{F}$	320 mH

In the presence of lumped capacitances and inductances greater than 1% of above value (excluding the cable) in the intrinsically safe input circuits, the maximum permissible external capacitances and inductances are to be taken from the following table.

Group	Maximum permissible external capacitance $C_0$	Maximum permissible external inductance $L_0$
I	4.8 $\mu\text{F}$	20 mH

Routine testing of the transformer shall be carried out in accordance with clause 11.2 of IEC 60079-11: 2006.

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