

Certification of **EXPLOSION PROTECTED ELECTRICAL EQUIPMENT**

ANZEx Scheme

Certificate of Conformity

Certificate No: **ANZEx 08.2008X** Issue: **0** **12 November 2008** Original Issue

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

Electrical Equipment: **Type KCD2-SR-Ex*. * Switch Amplifier**

Type of Protection and Marking Code: **[Ex ia] I**
-20 °C ≤ Ta ≤ +60 °C
ANZEx 08.2008X

Manufactured by: **Pepperl+Fuchs GmbH**
Königsberger Allee 87
68307 Mannheim
GERMANY

Pepperl+Fuchs Pte Ltd
18 Ayer Rajah Crescent
P+F Building
SINGAPORE 139942

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

Issued by:



Simtars

Queensland Government

A business unit of the Department of
Mines and Energy

Engineering, Testing and Certification Centre

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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: 2000 **Electrical apparatus for explosive gas atmospheres
Part 0: General requirements**

IEC 60079-11: 1999 **Electrical apparatus for explosive gas atmospheres
Part 11: Intrinsic safety "i"**

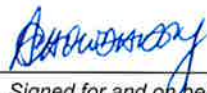
*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

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

Test Report No. and Issuing Body: **GB/BAS/ExTR06.0025/00, GB/BAS/ExTR06.0166/00 - Baseefa**

Quality Assessment Report No. and Issuing Body: **DE/PTB/QAR06.0007/01, DE/PTB/QAR06.0008/01 - PTB**

File Reference: **08/0157**



Signed for and on behalf of issuing authority

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

Position

12 November 2008

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 Type KCD2-SR-Ex*. Switch Amplifier is designed to transfer up to two digital signal inputs from a hazardous area to unspecified equipment located in a non-hazardous area. The voltage and current is limited to intrinsically safe levels and has linear characteristics. The hazardous area circuit is galvanically separated from the non-hazardous area circuit using Type 2a transformers.

There are three models of the Type KCD2-SR-Ex*. Switch Amplifier, the Type KCD2-SR-Ex2 Two Channel Switch Amplifier, the Type KCD2-SR-Ex1 Single Channel Switch Amplifier and the Type KCD2-SR-Ex1.LB Single Channel Switch Amplifier. The single channel models are de-populated versions of the Two Channel Switch model KCD2-SR-Ex2.

The equipment comprises a number of electronic components, including isolating transformers, fuses, zener diodes and current limiting resistors all mounted on a single printed circuit board (multi-layer two-sided) and housed in a plastic enclosure with polarised plug-in terminals for hazardous and non-hazardous area connections. Wire connections to the plugs are made via screw terminals. The hazardous area terminals are 1 to 4 and the non-hazardous area terminals are 5 to 10.

The non-hazardous area connections are via relay contacts with configuration switches allowing the setting of the direction of operation. An additional connection is provided to allow the module to be alternatively powered from a power rail connection. LED indication is provided for power on and channel status.

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Drawings:

Drawing No.	Drawing Title	Revision No.	Drawn/ Revision Date
16-533BS	Summary KCD2-SR-Ex*.*	-	2006-May-15
16-533BS-00 (Sheets 1 to 8 of 8)	Description KCD2-SR-Ex*.*	-	2006-Apr-25
16-533BS-01 (Sheets 1 & 2 of 4)	Schematic KCD2-SR-Ex2 K-System SlimLine	-	2006-Apr-25
16-533BS-01 (Sheets 3 & 4 of 4)	Schematic KCD2-SR-Ex1.* K-System SlimLine	-	2006-Apr-25
16-533BS-02	Relevant Components KCD2-SR-Ex*.* / HiC282*	-	2005-Dec-05
16-533BS-03 (Sheet 1 of 5)	Assembly drawing wired top side binary input KCD2-SR-Ex1.* / KCD2-SR-Ex2	-	2005-Sep-30
16-533BS-03 (Sheet 2 of 5)	Assembly drawing SMD top side binary input KCD2-SR-Ex2	-	2005-Sep-30
16-533BS-03 (Sheet 3 of 5)	Assembly drawing SMD bottom side binary input KCD2-SR-Ex2	-	2005-Sep-30
16-533BS-03 (Sheet 4 of 5)	Assembly drawing SMD top side binary input KCD2-SR-Ex1.*	-	2005-Sep-30
16-533BS-03 (Sheet 5 of 5)	Assembly drawing SMD bottom side binary input KCD2-SR-Ex1.*	-	2005-Sep-30
16-533-04 (Sheets 1 & 2 of 2)	housing KCD2	-	2005-Dec-05
16-533BS-05 (Sheet 1 of 4)	pcb layout TOP binary input KCD2-SR-Ex1(-Ex2)(.LB)	-	2005-Sep-30
16-533BS-05 (Sheet 2 of 4)	pcb layout TOP1 binary input KCD2-SR-Ex1 (-Ex2)(.LB)	-	2005-Sep-30

(Drawings continued next page)

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Drawing No.	Drawing Title	Revision No.	Drawn/ Revision Date
16-533BS-05 (Sheet 3 of 4)	pcb layout BOT1 binary input KCD2-SR-Ex1(-Ex2)(.LB)	-	2005-Sep-30
16-533BS-05 (Sheet 4 of 4)	pcb layout BOTTOM binary input KCD2-SR-Ex1(-Ex2)(.LB)	-	2005-Sep-30
16-533BS-06 (Sheets 1 to 4 of 4)	transformer KCD2-SR-Ex*.*/ HiC282*	-	2005-Dec-05
16-533SI-09 (Sheets 1 & 2 of 2)	Instructions KCD2-SR-Ex*.*	-	2008-Nov-05
16-533SI-10 (Sheets 1 to 3 of 3)	Type Label KCD2-SR-Ex*.*	-	2008-Nov-05
16-533BS A	Summary KCD2-SR-Ex*.*	-	2006-Nov-15
16-533BS-00A (Sheets 1 to 8 of 8)	Description KCD2-SR-Ex*.*	-	2006-Nov-15
16-533BS-06A (Sheets 1 to 4 of 4)	transformer KCD2-SR-Ex*.*/ HiC282*	-	2006-Nov-15

Conditions of Certification:

Non-hazardous area terminals 5 to 10, Power rails connections PR1 & PR2

Um = 253 V rms

Power rail connection PR4 (Fault Bus)

Um = 40 V d.c.

Hazardous area terminals 1 w.r.t. 2 (Channel 1)

Or

Hazardous area terminals 3 w.r.t. 4 (Channel 2 - KCD2-SR-Ex2 Model only)

U_i	C_i	L_i	U_0	I_0	P_0	C_0	L_0	L/R
12 V	0	0	10.5 V	17.1 mA	45 mW	73.1 (μF)	1000 mH	1628 μH/Ω

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Additional Information:

The circuit connected to non-hazardous area terminals 9 & 10 or power rail connections PR1 & PR2 is designed to operate from a d.c. supply voltage up to 30 V.

Non-hazardous area terminals 5 & 6 (Channel 1) and 7 & 8 (Channel 2) are connected to relay contacts which can switch up to 253 V r.m.s. and 2 A.

The circuit connected to power rail connection PR4 is designed to operate from a d.c. supply voltage up to 30 V.

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