

Certificate of Conformity

Ex EQUIPMENT

Certificate No.:	ANZEx 10.2002X	Current Issue:	3	Date of Issue:	2022-09-15
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Applicant: **Pepperl+Fuchs SE**
Lilienthalstrasse 200
68307 Mannheim
GERMANY

Equipment: KFD2-STa4-Ex2-b range of Dual Channel Smart Transmitter Isolator
(Refer Page 3 for model numbers)


Type of Explosion Protection: Intrinsic Safety "i"

Explosion Protection Marking: [Ex ia Ma] I
-20 °C ≤ Ta ≤ +60 °C

*This certificate is granted subject to the requirements as set out in
Joint Accreditation System of Australia and New Zealand Publications
ANZEx System Rules 2020 & ANZEx Certified Equipment Scheme Rules 2021*

Signed for and on behalf of issuing body

Name & Position


.....
Geoff Barnier
Principal Engineer - Certification
.....

This certificate is not transferable and remains the property of the issuing body.

The status of this certificate can be confirmed through the database located at www.anzex.com.au

Certificate issued by:

Safety in Mines, Testing and Research Station
2 Robert Smith Street, REDBANK QLD 4301

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Manufacturer : **Pepperl+Fuchs SE**
Lilienthalstrasse 200
68307 Mannheim
GERMANY

Additional Manufacturing Location(s): **Pepperl+Fuchs Asia Pte Ltd**
18 Ayer Rajah Crescent
Singapore 139942
SINGAPORE

STANDARDS:

The equipment 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 60079-0:2011 Ed 6.0 Explosive atmospheres Part 0: Equipment—General requirements

IEC 60079-11:2011 Ed 6.0 Explosive atmospheres Part 11: Equipment protection by intrinsic safety "i"

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

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Schedule

Equipment Description:

The KFD2-STa4-Ex2-b (a and b model designators are defined in the model numbers listed below) range of Dual Channel Smart Transmitter Isolator 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 provides galvanic isolation between the hazardous area and non-hazardous area circuits.

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 and housed in a plastic enclosure with plug-in terminals. Wire connections to the plugs are made via screw terminals. The hazardous area terminals are 1 to 6 and the non-hazardous area terminals are 7 to 12, 14, 15 and power rail terminals 1 and 2.

The following models are covered by this certificate:

KFD2-STC4-Ex2 – Dual channel current source with FIM plug-in terminals.
KFD2-STC4-Ex2-Y72195 – Dual channel current sink with FIM plug-in terminals.
KFD2-STV4-Ex2-1 – Dual channel 5V with FIM plug-in terminals.
KFD2-STV4-Ex2-2 – Dual channel 10V with FIM plug-in terminals.
KFD2-STC4-Ex2-Y229428
KFD2-STC4-Ex2-Y1...n
KFD2-STV4-Ex2-1-Y1...n
KFD2-STV4-Ex2-2-Y1...n
KFD2-CR4-Ex2
KFD2-CR4-Ex2-Y1...n

Electrical Ratings/Parameters

Nil

Specific Conditions of Use:

The safety device must be installed in a controlled environment with suitably reduced pollution.

Conditions of Certification:

None

Additional Information:

Entity parameters associated with the apparatus are as follows:

Non-hazardous area terminals 7 to 12, 14, 15 and Power rail terminals 1 & 2

Um = 250 V rms

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Hazardous area terminals 1 w.r.t. 3

Or

Hazardous area terminals 4 w.r.t. 6

U_o (V)	I_o (mA)	P_o (W)	C_i (nF)	L_i (mH)
25.2	93	0.58	12	0

The capacitance and either the inductance or inductance ratio (L/R) of the load connected to the output terminals of the equipment must not exceed the following values:

C_o (μ F)	L_o (mH)	L/R (μ H/ Ω)
4.3	26	787

Note:

The above parameters apply when one of the two conditions below is given:

- The total L_i of the external circuit (excluding the cable) is < 1% of the L_o value or
- The total C_i of the external circuit (excluding the cable) is < 1% of the C_o value.

The above parameters are reduced to 50% when both of the two conditions below are given:

- the total L_i of the external circuit (excluding the cable) > 1% of the L_o value and
- the total C_i of the external circuit (excluding the cable) > 1% of the C_o value .

The reduced capacitance of the external circuit (including cable) shall not be greater than 1 μ F.

The circuit connected to non-hazardous area terminals is designed to operate from a 40 Vd.c. supply.

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Register of Issues and Variations

includes the current issue

Issue 0 dated 2010-05-20

Standards relevant for this issue:

IEC 60079-0:2000 Ed 3.1 Explosive atmospheres Part 0: Equipment—General requirements

IEC 60079-11:1999 Ed 4.0 Explosive atmospheres Part 11: Equipment protection by intrinsic safety "i"

Test & Assessment Reports relevant for this issue:

TR No. & Issuing CBs: UK/BAS/03/1050, UK/BAS/05/0121; Baseefa

QAR No. & Issuing CB: DE/PTB/QAR06.0007/02, DE/PTB/QAR06.0008/02; PTB

File Reference: 10/0051

Manufacturer's Documents/Drawings associated with this issue:

Document Number	Pages / Sheets	Document Title	Revision	Date
266-007BS	1	Summary KFD2-CR4-Ex2.. & KFD2-STC(V)4-Ex2..	-	2005-Feb-10
266-007BS-01	4	Schematic KFD2-CR4-Ex2.. & KFD2-STC(V)4-Ex2..	-	2005-Feb-07
266-007BS-02	6	Components KFD2-CR4-Ex2.. & KFD2-STC(V)4-Ex2..	-	2005-Feb-07
266-007BS-03	3	Component overlay KFD2-CR4-Ex2.. & KFD2-STC(V)4-Ex2..	-	2005-Feb-08
266-007BS-04 (Sheets 1 and 2 of 12)	2	Moulded Transformer Housing KFD2-CR4-Ex2.. & KFD2-STC(V)4-Ex2..	-	2005-Feb-09
266-007BS-04 (Sheets 3 and 4 of 12)	2	Toroidal Housing KFD2-CR4-Ex2.. & KFD2-STC(V)4-Ex2..	-	2005-Feb-09
266-007BS-04 (Sheets 5 to 12 of 12)	8	KF - Housing 12 Term. Symm KFD2-CR4-Ex2.. & KFD2-STC(V)4-Ex2..	-	2005-Feb-09
266-007BS-05 (Sheets 1 to 9 of 13)	9	Main Printed Circuit Board KFD2-CR4-Ex2.. & KFD2-STC(V)4-Ex2..	-	2005-Feb-08
266-007BS-05 (Sheet 11 of 13)	1	Printed Circuit Board – Lacquering details KFD2-CR4-Ex2.. & KFD2-STC(V)4-Ex2..	-	2005-Feb-08
266-007BS-05 (Sheet 12 of 13)	1	Transformer printed circuit board – Lacquering details KFD2-CR4-Ex2.. & KFD2-STC(V)4-Ex2..	-	2005-Feb-08
266-007BS-05 (Sheet 13 of 13)	1	Zener barrier mounting board – Lacquering details KFD2-CR4-Ex2.. & KFD2-STC(V)4-Ex2..	-	2005-Feb-08
266-007BS-06	5	Transformer details KFD2-CR4-Ex2.. & KFD2-STC(V)4-Ex2..	-	2005-Feb-10
266-007AS-10	3	Type Label KFD2-STC(V)4-Ex2.. & KFD2-CR4-Ex2..	-	2010-May-10

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Current Issue: 3

Date of Issue: 2022-09-15

Issue 1 dated 2011-09-08Variations Permitted by this Issue

- An alternative PCB design and minor drawing changes
- Update editions of the standards
- Inclusion of new models listed below
 - KFD2-STC4-Ex2-Y229428
 - KFD2-STC4-Ex2-Y1...n
 - KFD2-STV4-Ex2-1-Y1...n
 - KFD2-STV4-Ex2-2-Y1...n
 - KFD2-CR4-Ex2
 - KFD2-CR4-Ex2-Y1...n

Standards relevant for this issue:**IEC 60079-0:2004 Ed 4.0** Explosive atmospheres Part 0: Equipment—General requirements**IEC 60079-11:2006 Ed 5.0** Explosive atmospheres Part 11: Equipment protection by intrinsic safety "i"Test & Assessment Reports relevant for this issue:

TR No. & Issuing CBs: UK/BAS/ExTR10.0291/00; Baseefa

QAR No. & Issuing CB: DE/PTB/QAR06.0007/02, DE/PTB/QAR06.0008/03; PTB

File Reference: 11/0053

Manufacturer's Documents/Drawings associated with this issue:

Document Number	Pages / Sheets	Document Title	Revision	Date
266-007BS-01K	4	Schematic KFD2-CR4-Ex2.. & KFD2-STC(V)4-Ex2..	-	2010-Jul-27
266-007BS-02K	1	Safety Relevant Components KFD2-CR4-Ex2.. & KFD2-STC(V)4-Ex2..	-	2010-Jul-30
266-007BS-03K	2	Component overlay KFD2-CR4-Ex2.. & KFD2-STC(V)4-Ex2..	-	2010-Oct-06
266-007BS-04J (Sheets 1 and 2 of 12)	2	Moulded Transformer Housing KFD2-CR4-Ex2.. & KFD2-STC(V)4-Ex2..	-	2010-Apr-28
266-007BS-04J (Sheets 3 and 4 of 12)	2	Toroidal Housing KFD2-CR4-Ex2.. & KFD2-STC(V)4-Ex2..	-	2010-Apr-28
266-007BS-04J (Sheets 5 to 12 of 12)	8	KF - Housing 15 Term. KFD2-CR4-Ex2.. & KFD2-STC(V)4-Ex2..	-	2005-Apr-28

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Document Number	Pages / Sheets	Document Title	Revision	Date
266-007BS-05K (Sheets 1 to 5 of 8)	5	Main Printed Circuit Board KFD2-CR4-Ex2.. & KFD2-STC(V)4-Ex2..	-	2010-Oct-06
266-007BS-05K (Sheet 6 of 8)	1	Transformer mounting plinth PCB KFD2-CR4-Ex2.. & KFD2-STC(V)4-Ex2..	-	2010-Oct-06
266-007BS-05K (Sheets 7 and 8 of 8)	2	Zener diode 6-way array PCB KFD2-CR4-Ex2.. & KFD2-STC(V)4-Ex2..	-	2010-Oct-06
266-007BS-06K (Sheets 1 and 2 of 4)	2	Transformer details for T101 & T201 KFD2-CR4-Ex2.. & KFD2-STC(V)4-Ex2..	-	2010-Jul-29
266-007BS-06K (Sheets 3 and 4 of 4)	2	Transformer details for T102 & T202 KFD2-CR4-Ex2.. & KFD2-STC(V)4-Ex2..	-	2010-Jul-29
266-007BS-07K	2	Printed Circuit Board Lacquering details KFD2-CR4-Ex2.. & KFD2-STC(V)4-Ex2..	-	2010-Oct-06
266-007SA-10A	3	Type Label KFD2-STC(V)4-Ex2.. & KFD2-CR4-Ex2..	-	2011-Aug-30

Issue 2 dated 2019-01-03

Variations Permitted by this Issue

- Amended referenced QARs

Standards relevant for this issue:

IEC 60079-0:2004 Ed 4.0 Explosive atmospheres Part 0: Equipment—General requirements

IEC 60079-11:2006 Ed 5.0 Explosive atmospheres Part 11: Equipment protection by intrinsic safety "i"

Test & Assessment Reports relevant for this issue:

TR No. & Issuing CBs: N/A
QAR No. & Issuing CB: DE/PTB/QAR06.0008/09; PTB
File Reference: 06/0041

Manufacturer's Documents/Drawings associated with this issue:

None

Issue 3 dated 2022-09-15

Variations Permitted by this Issue

- New PCB
- Update editions of the standards

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- Use of an alternative fuse
- Addition of an 'X' suffix to the certificate number for the condition "The safety device must be installed in a controlled environment with suitably reduced pollution" due to the removal of the conformal coating
- Modification of Applicant and Manufacturer names to show current legal form

Standards relevant for this issue:

IEC 60079-0:2011 Ed 6.0 Explosive atmospheres Part 0: Equipment—General requirements

IEC 60079-11:2011 Ed 6.0 Explosive atmospheres Part 11: Equipment protection by intrinsic safety "i"

Test & Assessment Reports relevant for this issue:

TR No. & Issuing CBs: GB/BAS/ExTR14.0292/00, GB/BAS/ExTR15.0306/00, GB/BAS/ExTR16.0291/00; Baseefa

QAR No. & Issuing CB: DE/PTB/QAR06.0008/16; PTB

File Reference: 060041Audit

Manufacturer's Documents/Drawings associated with this issue:

Document Number	Pages / Sheets	Document Title	Revision	Date
GB/BAS/ExTR14.0292/00				
266-007IE-D	1	Summary KFD2-CR4-Ex2.. & KFD2-STC(V)4-Ex2..	-	2014-May-12
266-010BS-04E (Sheet 1 of 15)	1	Mechanical Parts Moulded Transformer Housing - base	-	2014-Mar-27
266-010BS-04E (Sheet 2 of 15)	1	Mechanical Parts Moulded Transformer Housing – alternative base	-	2014-Mar-27
266-010BS-04E (Sheet 3 of 15)	1	Mechanical Parts Moulded Transformer Housing – cover	-	2014-Mar-27
266-010BS-04E (Sheets 4 to 5 of 15)	2	Mechanical Parts Transformer – Toroidal Housing	-	2014-Mar-27
266-010BS-04E (Sheets 6 to 15 of 15)	10	Mechanical Parts KF - Housing 15 Term. Asymm	-	2014-Mar-27
266-007BS-10L	3	Type Label KFD2-STC(V)4-Ex2..	-	2014-May-12
GB/BAS/ExTR15.0306/00				
266-007IE-E	1	Summary KFD2-CR4-Ex2.. & KFD2-STC(V)4-Ex2..	-	2015-Oct-15

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Document Number	Pages / Sheets	Document Title	Revision	Date
266-007BS-02M	1	Safety Relevant Components KFD2-CR4-Ex2.. & KFD2-STC(V)4-Ex2..	-	2015-Oct-15
GB/BAS/ExTR16.0291/00				
266-007BS-N	1	Summary KFD2-CR4-Ex2.. & KFD2-STC(V)4-Ex2(.H)..	-	2016-Sep-15
266-007BS-01N	4	Schematic KFD2-CR4-Ex2.. & KFD2-STC(V)4-Ex2..	-	2016-Mar-29
266-007BS-02N	1	Safety Relevant Components KFD2-CR4-Ex2.. & KFD2-STC(V)4-Ex2..	-	2016-Mar-29
266-007BS-03N	2	Component overlay KFD2-CR4-Ex2.. & KFD2-STC(V)4-Ex2..	-	2016-Apr-04
266-010BS-04F (Sheet 1 of 15)	1	Mechanical parts Moulded Transformer Housing - base KFD2-CR4-Ex2.. & KFD2-STC(V)4-Ex2..	-	2016-Mar-23
266-010BS-04F (Sheet 2 of 15)	1	Mechanical Parts Moulded Transformer Housing – alternative base	-	2016-Mar-23
266-010BS-04F (Sheet 3 of 15)	1	Mechanical Parts Moulded Transformer Housing – cover	-	2016-Mar-23
266-010BS-04F (Sheets 4 to 5 of 15)	2	Mechanical Parts Transformer – Toroidal Housing	-	2016-Mar-23
266-010BS-04F (Sheets 6 to 15 of 15)	10	Mechanical Parts KF - Housing 15 Term. Asymm	-	2016-Mar-23
266-007BS-05N (Sheets 1 to 5 of 7)	5	Main Printed Circuit Board KFD2-CR4-Ex2.. & KFD2-STC(V)4-Ex2..	-	2016-Apr-04
266-007BS-05N (Sheet 6 of 7)	1	Transformer mounting plinth PCB KFD2-CR4-Ex2.. & KFD2-STC(V)4-Ex2..	-	2016-Apr-04
266-007BS-05N (Sheets 7 of 7)	1	Zener diode 6-way array PCB KFD2-CR4-Ex2.. & KFD2-STC(V)4-Ex2..	-	2016-Apr-04
266-007BS-06N (Sheets 1 and 2 of 4)	2	Transformer details for T101 & T201 KFD2-CR4-Ex2.. & KFD2-STC(V)4-Ex2..	-	2016-Sep-15
266-007BS-06N (Sheets 3 and 4 of 4)	2	Transformer details for T102 & T202 KFD2-CR4-Ex2.. & KFD2-STC(V)4-Ex2..	-	2016-Sep-15

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Document Number	Pages / Sheets	Document Title	Revision	Date
266-007SI-10	1	Type Label (ANZEx) KFD2-STC(V)4-Ex2.. & KFD2-CR4-Ex2..	-	2022-May-03