

Certificate of Conformity

Ex EQUIPMENT

Certificate No.:	ANZEx 08.2009X	Current Issue:	3	Date of Issue:	2024-01-17
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Applicant: **Pepperl+Fuchs SE**
Lilienthalstrasse 200
68307 Mannheim
GERMANY

Equipment: Galvanically Isolated Barrier
Types KCD2-STC-Ex1(.SP)-** / KCD2-SCD-Ex1(.SP)-**


Type of Explosion Protection: Intrinsic Safety "i"

Explosion Protection Marking: [Ex ia Ma] I
-40 °C ≤ Ta ≤ +70 °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

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 60079-0:2017 Ed 7.0 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.

Certificate of Conformity

Ex EQUIPMENT

Certificate No.: **ANZEx 08.2009X**

Current Issue: 3

Date of Issue: 2024-01-17

Schedule

Equipment Description:

The SMART Transmitter Power Supply KCD2-STC-Ex1-** and KCD2-STC-Ex1.SP-** and SMART Current Driver KCD2-SCD-Ex1-** and KCD2-SCD-Ex1.SP-** are galvanically isolated associated apparatus.

The SMART Transmitter Power Supply types KCD2-STC-Ex1-** and KCD2-STC-Ex1.SP-** supply 2-wire SMART transmitters in a hazardous area and can also be used with 2-wire SMART current sources. It transfers the analog input signal to the safe area as an isolated current value.

The SMART Current Driver type KCD2-SCD-Ex1-** and KCD2-SCD-Ex1.SP-** drives SMART I/P converters, electrical valves, and positioners in hazardous areas. Digital signals are superimposed on the analog values at the field or control side and are transferred bidirectionally.

Electrical Ratings/Parameters

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

$U_m = 253 \text{ V rms}$

Hazardous area output parameters:

Models	Terminals	U_0 (V)	I_0 (mA)	P_0 (mW)	C_0 (μF)	L_0 (mH)	L_0/R_0 ($\mu\text{H}/\Omega$)
KCD2-STC-Ex1(.SP)-** KCD2-SCD-Ex1(.SP)-**	1, 2	25.2	100	630	4.14	46	743
KCD2-STC-Ex1(.SP)-**	3, 4	7.2	100	25	1000	46	356

$U_i = 30 \text{ V}$, $I_i = 128 \text{ mA}$, $P_i = 1 \text{ W}$ for terminals 3, 4 only.

$C_i = 5.7\text{nF}$ for all terminals.

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_0 value or
- The total C_i of the external circuit (excluding the cable) is $< 1\%$ of the C_0 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_0 value and
- the total C_i of the external circuit (excluding the cable) $> 1\%$ of the C_0 value .

The reduced capacitance of the external circuit (including cable) shall not be greater than $1\mu\text{F}$.

Certificate of Conformity

Ex EQUIPMENT

Certificate No.: **ANZEx 08.2009X**

Current Issue: 3

Date of Issue: 2024-01-17

Specific Conditions of Use:

1. The equipment must be installed and operated only in a controlled environment that ensures a pollution degree 2 (or better) according to IEC 60664-1.
2. The equipment must be installed and operated only in an environment of overvoltage category II (or better) according to IEC 60664-1.

Conditions of Certification:

None

Additional Information:

None

Certificate of Conformity

Ex EQUIPMENT

Certificate No.: ANZEx 08.2009X	Current Issue: 3	Date of Issue: 2024-01-17
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Register of Issues and Variations

includes the current issue

Issue 0 dated 2008-12-02

Standards relevant for this issue:

- IEC 60079-0:2004 Ed 4.0** 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: IT/CES/ExTR08.0002/00; CESI
 QAR No. & Issuing CB: DE/PTB/QAR06.0007/01, DE/PTB/QAR06.0008/01; PTB
 File Reference: 08/0156

Manufacturer's Documents/Drawings associated with this issue:

Document Number	Pages / Sheets	Document Title	Revision	Date
366-028-00	15	Description	-	2006-Feb-20
366-028-01	2	KCD2-STC-Ex1 / KCD2-SCD-Ex1 Schematic	-	2006-Feb-20
366-028-03	3	KCD2-STC-Ex1 / KCD2-SCD-Ex1 Assembly drawing wired TOP	-	2006-Feb-20
366-028-04	4	KCD2-STC-Ex1 / KCD2-SCD-Ex1 Housing	-	2006-Feb-20
366-028-05	2	KCD2-STC-Ex1 / KCD2-SCD-Ex1 PCB layout TOP	-	2006-Feb-20
366-028-06	4	KCD2-STC-Ex1 / KCD2-SCD-Ex1 transformer	-	2006-Feb-20
366-028-07	1	KCD2-STC-Ex1 / KCD2-SCD-Ex1 Lacquering TOP	-	2006-Feb-20
366-028SI-09	6	KCD2-STC-Ex1 / KCD2-SCD-Ex1 Instructions	-	2008-Nov-25
366-028SI-10	4	KCD2-STC-Ex1 / KCD2-SCD-Ex1 Type Label	-	2008-Nov-25

Issue 1 dated 2019-01-03

Variations Permitted by this Issue

- Amended referenced QARs.

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Standards relevant for this issue:

IEC 60079-0:2004 Ed 4.0 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: IT/CES/ExTR08.0002/00; CESI
 QAR No. & Issuing CB: DE/PTB/QAR06.0008/09; PTB
 File Reference: 06/0041

Manufacturer's Documents/Drawings associated with this issue:

None

Issue 2 dated 2022-09-15

Variations Permitted by this Issue

- Change to the referenced ExTR number.
- Update editions of the standards.
- Extend ambient temperature range.
- Minor circuit modifications.
- Update entity parameters.
- Added barrier models KCD2-STC-Ex1.SP and KCD2-SCD-Ex1.SP (spring terminal blocks) to the range.
- Modification of Applicant and Manufacturer names to show current legal form.

Standards relevant for this issue:

IEC 60079-0:2017 Ed 7.0 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: IT/CES/ExTR06.0001/01, IT/CES/ExTR06.0001/02, IT/CES/ExTR06.0001/03, IT/CES/ExTR21.0005/00; CESI
 QAR No. & Issuing CB: DE/PTB/QAR06.0008/16; PTB
 File Reference: 060041Audit

Certificate of Conformity

Ex EQUIPMENT

Certificate No.: ANZEx 08.2009X	Current Issue: 3	Date of Issue: 2024-01-17
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Manufacturer's Documents/Drawings associated with this issue:

Document Number	Pages / Sheets	Document Title	Revision	Date
IT/CES/ExTR06.0001/01				
366-028CE	1	Summary KCD2-STC-Ex1 / KCD2-SCD-Ex1	-	2006-Feb-20
366-028-00	15	Description KCD2-STC-Ex1 / KCD2-SCD-Ex1	-	2006-Feb-20
366-028-01	2	Schematic KCD2-STC-Ex1 / KCD2-SCD-Ex1	-	2006-Feb-20
366-028-02	1	Description KCD2-STC-Ex1 / KCD2-SCD-Ex1	-	2006-Feb-20
366-028-03 (Sheets 1 and 2 of 3)	2	Assembly drawing wired TOP KCD2-STC-Ex1 / KCD2-SCD-Ex1	-	2006-Feb-20
366-028-03 (Sheet 3 of 3)	1	Assembly drawing smd TOP KCD2-STC-Ex1 / KCD2-SCD-Ex1	-	2006-Feb-20
366-028-04	4	Housing KCD2-STC-Ex1 / KCD2-SCD-Ex1	-	2006-Feb-20
366-028-05 (Sheet 1 of 2)	1	PCB layout TOP KCD2-STC-Ex1 / KCD2-SCD-Ex1	-	2006-Feb-20
366-028-05 (Sheet 2 of 2)	1	PCB layout BOTTOM KCD2-STC-Ex1 / KCD2-SCD-Ex1	-	2006-Feb-20
366-028-06	4	transformer KCD2-STC-Ex1 / KCD2-SCD-Ex1	-	2006-Feb-20
366-028-07	1	Lacquering TOP KCD2-STC-Ex1 / KCD2-SCD-Ex1	-	2006-Feb-20
366-028SI-09	6	Instructions KCD2-STC-Ex1 / KCD2-SCD-Ex1	-	2006-Feb-20
366-028-13	2	Test Report KCD2-STC-Ex1 / KCD2-SCD-Ex1	-	2006-Feb-20
IT/CES/ExTR06.0001/02				
366-0028CE-00B	6	Description KCD2-STC-Ex1 / KCD2-SCD-Ex1	-	2011-Oct-03
366-0028CE-02B	7	Component List KCD2-STC-Ex1 & KCD2-SCD-Ex1	-	2011-Oct-03

Certificate of Conformity

Ex EQUIPMENT

Certificate No.: **ANZEx 08.2009X** Current Issue: 3 Date of Issue: 2024-01-17

Document Number	Pages / Sheets	Document Title	Revision	Date
366-0028CE-03B	4	Assembly drawing KCD2-STC-Ex1 & KCD2-SCD-Ex1	-	2011-Oct-03
366-0028CE-09B	2	Instructions for KCD2-STC-Ex1 & KCD2-SCD-Ex1	-	2011-Oct-03
IT/CES/ExTR06.0001/03				
366-0028CE-00C	32	Description KCD2-STC-Ex1(.SP)-** / KCD2-SCD-Ex1(.SP)-**	-	2018-Nov-20
366-0028CE-01C	2	Schematic KCD2-STC-Ex1(.SP)-** / KCD2-SCD-Ex1(.SP)-**	-	2018-Nov-20
366-0028CE-02C	11	Bill of material KCD2-STC-Ex1(.SP)-** / KCD2-SCD-Ex1(.SP)-**	-	2018-Nov-20
366-0028CE-03C	4	Component setup KCD2-STC-Ex1(.SP)-** / KCD2-SCD-Ex1(.SP)-**	-	2018-Nov-20
366-0028CE-05C (Sheets 1 and 3 of 4)	2	Layout Top KCD2-STC-Ex1(.SP)-** / KCD2-SCD-Ex1(.SP)-**	-	2018-Nov-20
366-0028CE-05C (Sheets 2 and 4 of 4)	2	Layout Bottom KCD2-STC-Ex1(.SP)-** / KCD2-SCD-Ex1(.SP)-**	-	2018-Nov-20
366-0028CE-06C	3	Transformer KCD2-STC-Ex1(.SP)-** / KCD2-SCD-Ex1(.SP)-**	-	2018-Nov-20
366-0028CE-09C	3	Instructions KCD2-STC-Ex1(.SP)-** / KCD2-SCD-Ex1(.SP)-**	-	2018-Nov-20
366-0028SI-10A	1	Type Label KCD2-STC-Ex1(.SP)-** / KCD2-SCD-Ex1(.SP)-**	-	2022-Apr-13

Issue 3 dated 2024-01-17

Variations Permitted by this Issue

- Changes to the electrical schematics and PCB.
- New maximum input power for terminals 3(+) and 4(-).
- Updated Equipment Description.

Standards relevant for this issue:

IEC 60079-0:2017 Ed 7.0 Explosive atmospheres Part 0: Equipment—General requirements

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

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Test & Assessment Reports relevant for this issue:

TR No. & Issuing CBs: IT/CES/ExTR06.0001/04, IT/CES/ExTR06.0001/05; CESI
 QAR No. & Issuing CB: DE/PTB/QAR06.0008/19; PTB
 File Reference: 060041Audit

Manufacturer's Documents/Drawings associated with this issue:

Document Number	Pages / Sheets	Document Title	Revision	Date
IT/CES/ExTR06.0001/04				
366-0028CE-00D	35	Description KCD2-STC-Ex1(.SP)-** / KCD2-SCD-Ex1(.SP)-**	-	2022-Aug-01
366-0028CE-01D	2	Schematic KCD2-STC-Ex1(.SP)-** / KCD2-SCD-Ex1(.SP)-**	-	2022-Aug-01
366-0028CE-02D	14	Bill of material KCD2-STC-Ex1(.SP)-** / KCD2-SCD-Ex1(.SP)-**	-	2022-Aug-01
366-0028CE-03D	4	Component setup KCD2-STC-Ex1(.SP)-** / KCD2-SCD-Ex1(.SP)-**	-	2022-Aug-01
366-0028CE-05D	2	Layout Top KCD2-STC-Ex1(.SP)-** / KCD2-SCD-Ex1(.SP)-**	-	2022-Aug-01
366-0028CE-09D	3	Instructions KCD2-STC-Ex1(.SP)-** / KCD2-SCD-Ex1(.SP)-**	-	2022-Aug-01
366-0028CE-10D	3	Type Label KCD2-STC-Ex1(.SP)-** / KCD2-SCD-Ex1(.SP)-**	-	2022-Aug-01
366-0028CE-13D	21	Test Report KCD2-STC-Ex1(.SP)-** / KCD2-SCD-Ex1(.SP)-**	-	2022-Aug-01
MDEC-2230A	1	Manufacturers Certificate	-	16.12.2020
DOC-xxxx	1	IEC-Declaration of conformity	-	202x-xx-xx
IT/CES/ExTR06.0001/05				
366-0028CE-00E	1	Description KCD2-STC-Ex1(.SP)-** / KCD2-SCD-Ex1(.SP)-**	-	2023-Dec-05
366-0028CE-03E	4	Component setup KCD2-STC-Ex1(.SP)-** / KCD2-SCD-Ex1(.SP)-**	-	2023-Nov-15