ANZEx

Australian/New Zealand Certification Scheme
for Explosion Protected Equipment

Certificate of Conformity

Ex EQUIPMENT

Certificate No.:	**ANZEx 21.2004X**	*Current Issue:* 2	*Date of Issue:*	2026-06-08

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

Equipment: Smart Transmitter Isolator Type KFD2-STC(V)5-Ex1.2O... and KFD2-STC(V)5- Ex2...

Type of Explosion Protection: Intrinsic Safety 'i'

Explosion Protection Marking: [Ex ia Ma] I
Tamb: -20 °C to +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

JAS-ANZ
WWW.JAS-ANZ.ORG/REGISTER

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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

Pepperl+Fuchs (Vietnam) Co. Ltd.
Lot S.12-16a, Street no. 20
Tan Thuan Export Processing Zone
Tan Thuan Ward
Ho Chi Minh City
VIETNAM

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.

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Schedule

Equipment Description:

The Smart Transmitter Isolator Type KFD2-STC(V)5-Ex1.2O... and KFD2-STC(V)5-Ex2... are Intrinsically Safe Associated Apparatus Transmitter Power Supplies that transfer monitoring signals from a hazardous area to a safe area and communication signals in both directions. The Safe Area connections are the Power Supply and Outputs. The Hazardous Area Connections (Input Circuits) are for Sink Input, Source Input or Three Wire Input dependant on the model type.

Model Description

Models: Smart Transmitter Isolator Type KFD2-STC(V)5-Ex2...
Smart Transmitter Isolator Type KFD2-STC(V)5-Ex1.2O...

Where:

KFD2-ST	=	Smart Transmitter Isolator
C	=	Current source/sink
(V)	=	Voltage
5-Ex2	=	Dual hazardous area input/Dual non-hazardous area output.
5-Ex1.2O	=	Single hazardous area input/Dual non-hazardous area output.
-1	=	5 Volt – used with “V”
-2	=	10 Volt – used with “V”
.H	=	Higher field voltage
.NCL	=	No current limit
-Y1...n	=	Customised version - does not affect intrinsic safety
-…	=	Customised version - combination of numbers/letters does not affect intrinsic safety

Electrical Ratings/Parameters

SAFE Area Connections: KFD2-STC(V)5-Ex2.. & KFD2-STC(V)5-Ex1.20…:

Power Supply	
Connection(s):	Terminals 14, 15 and Power Rail 1,2
Operating Supply Voltage:	18 Vdc to 30 Vdc
Maximum Voltage (Um):	250 Vac
Maximum Power::	
- KFD2-STC5-Ex1.2O	≤ 1.7 W
- KFD2-STC5-Ex2	≤ 2.6 W

Output	
Connection(s):	Terminals 7, 8, 9, 10, 11, 12
Maximum Voltage (Um):	250 Vac

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Sink transmitter input connection - KFD2-STC(V)5-Ex2.. & KFD2-STC(V)5-Ex1.20…:

Hazardous Area Connections, Input Circuits:

Sink transmitter input connection	
Connection(s):	Terminals 1, 3 and/or 4, 6
Uo	26.2 V
Uq	27.25 V
Io	93 mA
Po	634 mW
Ci	5 nF
Li	0

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

Group	***Co* (µF)**	***Lo* (mH)**	***Lo/Ro* (µH/Ω)**
I	4.415	53.95	737.9

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

- The total Li of the external circuit (excluding the cable) is < 1% of the Lo value, or
- The total Ci of the external circuit (excluding the cable) is < 1% of the Co value.

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

- The total Li of the external circuit (excluding the cable) > 1% of the Lo, and
- The total Ci of the external circuit (excluding the cable) > 1% of the Co.

Note: the reduced capacitance of the external circuit (including cable) shall not be greater than 1 uF.

Source transmitter input connection - KFD2-STC(V)5-Ex2.. & KFD2-STC(V)5-Ex1.20…:

Hazardous Area Connections, Input Circuits:

Source transmitter input connection	
Connection(s):	Terminals 3, 2 and /or 6,5
Uo	2.0 V
Io	8.5 mA
Po	4.3 mW
Ui	30 V
Ii	115 mA
Pi	1000 mW
Ci	0
Li	0
Connection(s):	3 +ve wrt 2 and/or 6 +ve wrt 5
Uo	2.0 V

This certificate and schedule may only be reproduced in full

Certificate of Conformity
Ex EQUIPMENT

Certificate No.:	ANZEx 21.2004X	Current Issue: 2	Date of Issue: 2026-06-08

Source transmitter input connection	
Io	8.5 mA
Po	4.3 mW
Connection(s):	2 +ve wrt 3 and/or 5 +ve wrt 6
Uo	1.0 V
Io	4.3 mA
Po	1.1 mW

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

Group	*Co* (µF)	*Lo* (mH)	*Lo/Ro* (µH/Ω)
I	1000	6459	109803

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

- The total Li of the external circuit (excluding the cable) is < 1% of the Lo value or
- The total Ci of the external circuit (excluding the cable) is < 1% of the Co value.

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

- The total Li of the external circuit (excluding the cable) > 1% of the Lo and
- The total Ci of the external circuit (excluding the cable) > 1% of the Co.

Note: the reduced capacitance of the external circuit (including cable) shall not be greater than 1 uF.

Three wire transmitter input connection - KFD2-STC(V)5-Ex2.. & KFD2-STC(V)5-Ex1.20…:

Hazardous Area Connections, Input Circuits:

Three wire transmitter input connection	
Connection(s):	Terminals 1, 2, 3 and/or 4, 5, 6
Uo	26.2 V
Uq	27.25 V
Io	115 mA
Po	784 mW
Ci	5 nF
Li	0

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

Group	*Co* (µF)	*Lo* (mH)	*Lo/Ro* (µH/Ω)
I	4.415	35.27	595.6

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

- The total Li of the external circuit (excluding the cable) is < 1% of the Lo value, or

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- The total Ci of the external circuit (excluding the cable) is < 1% of the Co value.

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

- The total Li of the external circuit (excluding the cable) > 1% of the Lo, and
- The total Ci of the external circuit (excluding the cable) > 1% of the Co.

Note: the reduced capacitance of the external circuit (including cable) shall not be greater than 1 uF.

Sink transmitter input connection - KFD2-STC(V)5-Ex2.H... & KFD2-STC(V)5-Ex1.2O.H...:

Hazardous Area Connections, Input Circuits:

Sink transmitter input connection	
Connection(s):	Terminals 1, 3 and/or 4, 6
Uo	27.2 V
Io	93 mA
Po	633 mW
Ci	5 nF
Li	0

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

Group	***Co* (µF)**	***Lo* (mH)**	***Lo/Ro* (µH/Ω)**
I	4.045	53.95	737.9

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

- The total Li of the external circuit (excluding the cable) is < 1% of the Lo value, or
- The total Ci of the external circuit (excluding the cable) is < 1% of the Co value.

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

- The total Li of the external circuit (excluding the cable) > 1% of the Lo, and
- The total Ci of the external circuit (excluding the cable) > 1% of the Co.

Note: the reduced capacitance of the external circuit (including cable) shall not be greater than 1 uF.

Source transmitter input connection - KFD2-STC(V)5-Ex2.H... & KFD2-STC(V)5-Ex1.2O.H...:

Hazardous Area Connections, Input Circuits:

Source transmitter input connection	
Connection(s):	Terminals 3, 2 and/or 6, 5
Uo	2.0 V
Io	8.5 mA
Po	4.3 mW
Ui	30 V
Ii	115 mA

This certificate and schedule may only be reproduced in full

Certificate of Conformity
Ex EQUIPMENT

Certificate No.:	ANZEx 21.2004X	Current Issue: 2	Date of Issue: 2026-06-08

Source transmitter input connection	
Pi	1000 mW
Ci	0
Li	0
Connection:	3 +ve wrt 2 and/or 6 +ve wrt 5
Uo	2.0 V
Io	8.5 mA
Po	4.3 mW
Connection:	2 +ve wrt 3 and/or 5+ve wrt 6
Uo	1.0 V
Io	4.3 mA
Po	1.1 mW

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

Group	*Co* (µF)	*Lo* (mH)	*Lo/Ro* (µH/Ω)
I	1000	6459	109803

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

- The total Li of the external circuit (excluding the cable) is < 1% of the Lo value or
- The total Ci of the external circuit (excluding the cable) is < 1% of the Co value.

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

- The total Li of the external circuit (excluding the cable) > 1% of the Lo and
- The total Ci of the external circuit (excluding the cable) > 1% of the Co.

Note: the reduced capacitance of the external circuit (including cable) shall not be greater than 1 uF.

Three wire transmitter input connection - KFD2-STC(V)5-Ex2.H... & KFD2-STC(V)5-Ex1.2O.H...:

Hazardous Area Connections, Input Circuits:

Three wire transmitter input connection	
Connection(s):	Terminals 1, 2, 3 and/or 4, 5, 6
Uo	27.2 V
Io	115 mA
Po	782 mW
Ci	5 nF
Li	0

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Certificate of Conformity
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Certificate No.:	ANZEx 21.2004X	Current Issue: 2	Date of Issue: 2026-06-08

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

Group	*Co* (µF)	*Lo* (mH)	*Lo/Ro* (µH/Ω)
I	4.045	35.27	596.7

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

- The total Li of the external circuit (excluding the cable) is < 1% of the Lo value, or
- The total Ci of the external circuit (excluding the cable) is < 1% of the Co value.

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

- The total Li of the external circuit (excluding the cable) > 1% of the Lo, and
- The total Ci of the external circuit (excluding the cable) > 1% of the Co.

Note: the reduced capacitance of the external circuit (including cable) shall not be greater than 1 uF.

Specific Conditions of Use:

1. The entity parameters shall be observed.
2. The equipment shall be installed in an enclosure that provides a degree of protection not less than IP54 in accordance requirements of IEC 60079-0 unless the equipment is intended to be afforded an equivalent degree of protection by location. In addition, the pollution level shall be limited to pollution degree 2 or better as defined in IEC 60664-1 (Pollution degree 2 can be achieved when the installation is in a controlled environment with suitably controlled condensation or airborne pollution).
3. For some types of enclosure, additional certification will be required to permit the installation of the module within the enclosure. Reference should be made to the enclosure certificate. The installer shall ensure that the maximum ambient temperature of the module when installed is not exceeded.

Conditions of Certification:

1. All transformers shall be subjected to IEC 60079-11 Clause 11.2 Routine Tests for Infallible Transformers with an applied voltage of 1 500 V applied between the input and output windings.

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Manufacturer's Documents/Drawings associated with this issue:

Document/Drawing Title	Document/Drawing Number	Pages / Sheets	Revision	Date
* Schematics KFD2-STC(V)5-Ex2... & KFD2- STC(V)5-Ex1.2O...	16-1136CM-01A	7	-	24-Jul-2023
Safety Relevant Components KFD2-STC(V)5- Ex2... & KFD2-STC(V)5-Ex1.2O...	16-1136CM-02	22	-	2017-Feb-27
* Component Layout KFD2-STC(V)5-Ex2... & KFD2-STC(V)5-Ex1.2O...	16-1136CM-03A	3	-	2023-Aug-01
Mechanical Parts KF-Extended-Housing 15 term. Asymm	16-1135CM-04	10	-	2016-Sep-06
* PCB KFD2-STC(V)5-Ex2... & KFD2-STC(V)5-Ex1.2O...	16-1136CM-05B	6	-	2023-Jul-25
Transformers KFD2-STC(V)5-Ex2... & KFD2- STC(V)5-Ex1.2O...	16-1136CM-06	8	-	2016-Oct-19
Instructions KFD2-STC(V)5-Ex2... & KFD2- STC(V)5-Ex1.2O...	16-1136CM-09	3	-	2017-Mar-10
Type Label (ANZEx) KFD2-STC(V)5-Ex2.. & KFD2-STC(V)5-Ex1.2O..	16-1136SI-10	1	-	2022-Feb-15

Note: An * is included before the title of documents that are new or revised.

Additional Information:

None

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Ex EQUIPMENT

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Register of Issues and Variations
includes the current issue

Issue 0 dated 2022-03-02

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:	GB/CML/ExTR17.0037/00, GB/CML/ExTR18.0077/00, GB/CML/ExTR20.0237/00, GB/CML/ExTR21.0098/00; CML
QAR No. & Issuing CB:	DE/PTB/QAR06.0008/16; PTB
File Reference:	210002Cert

Issue 1 dated 2025-03-10

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"

Variations Permitted by this Issue

- Addition of Vietnam as a manufacturing location.
- Removed test report GB/CML/ExTR20.0237/00 as it included no technical changes or technical documents.
- Reviewed and updated the drawing list.
- Minor change to circuitry related to offset-calibration circuits not affecting Intrinsic Safety.

Test & Assessment Reports relevant for this issue:

TR No. & Issuing CBs:	GB/CML/ExTR17.0037/00, GB/CML/ExTR18.0077/00, GB/CML/ExTR21.0098/00, GB/CML/ExTR23.0246/00; CML
QAR No. & Issuing CB:	DE/PTB/QAR06.0008/21; PTB
File Reference:	060041Audit

Issue 2 dated 2026-06-08

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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Ex EQUIPMENT

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Variations Permitted by this Issue

- Update address for manufacturing location Vietnam
- Change auditing CB and linked QAR

Test & Assessment Reports relevant for this issue:

TR No. & Issuing CBs:	GB/CML/ExTR17.0037/00, GB/CML/ExTR18.0077/00, GB/CML/ExTR21.0098/00, GB/CML/ExTR23.0246/00; CML
QAR No. & Issuing CB:	HR/FIDI/QAR24.0001/03; Fiditas
File Reference:	060041Audit

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