IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: **IECEx BAS 08.0079**

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Certificate history:

Issue 7 (2025-04-10)
Issue 6 (2021-11-25)
Issue 5 (2021-03-29)
Issue 4 (2015-04-28)
Issue 3 (2012-09-10)
Issue 2 (2012-05-24)
Issue 1 (2010-01-20)
Issue 0 (2008-09-10)

Status: **Current**

Issue No: 8

Date of Issue: 2025-04-17

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

Equipment: **Smart Fire Detector Isolator Type KFD0-CS-Ex*.54/56**

Optional accessory:

Type of Protection: **Intrinsic Safety**

Marking: **[Ex ia Ga] IIC**
[Ex ia Da] IIIC
[Ex ia Ma] I

Approved for issue on behalf of the IECEx Certification Body: **D Brearley**

Position: **Lead Certification Engineer**

Signature:
(for printed version)

Date:
(for printed version)

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Certificate issued by:

SGS UK Limited
Rockhead Business Park
Staden Lane
Buxton, Derbyshire SK17 9RZ
United Kingdom

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

Manufacturing locations:

Pepperl+Fuchs Asia Pte. Ltd.
18 Ayer Rajah Crescent
Singapore 139942
Singapore

Pepperl+Fuchs Co. Ltd.
Lot S 12-16a
Street 20 Tan Thuan EPZ
Ward Tan Thuan Dong, District 7
Ho Chi Minh City
Viet Nam

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements.This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended

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 Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

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

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

TEST & ASSESSMENT REPORTS:
A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Reports:

GB/BAS/ExTR08.0169/00
GB/BAS/ExTR10.0010/00
GB/BAS/ExTR12.0138/01
GB/BAS/ExTR15.0020/00
GB/BAS/ExTR21.0189/00
GB/SGS/ExTR25.0043/00

Quality Assessment Report:

HR/FIDI/QAR24.0001/00

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EQUIPMENT:
Equipment and systems covered by this Certificate are as follows:

The Smart Fire Detector Isolator Type KFD0-CS-Ex*.54/56 is designed to provide a single or dual channel galvanically isolated interface to enable the connection of apparatus located in a hazardous area with apparatus located in a non-hazardous area by providing galvanic isolation and limiting the voltage and current into the hazardous area to intrinsically safe levels.

The Smart Fire Detector Isolator Type KFD0-CS-Ex*.54/56 comprises a number of electrical components, including two isolating transformers, fuses, resistors and zener diodes all mounted onto a single printed circuit board (PCB) and housed within a plastic enclosure.

28V 93mA 0.653W variants
Smart Fire Detector Isolator Type KFD0-CS-Ex1.54
Smart Fire Detector Isolator Type KFD0-CS-Ex2.54
Smart Fire Detector Isolator Type KFD0-CS-Ex1.54-Y1/Y3
Smart Fire Detector Isolator Type KFD0-CS-Ex2.54-Y1/Y3
Smart Fire Detector Isolator Type KFD0-CS-Ex1.54 with part number Y207411
Smart Fire Detector Isolator Type KFD0-CS-Ex2.54 with part number Y207412

25.2V 43mA 271mW variants
Smart Fire Detector Isolator Type KFD0-CS-Ex1.54-Y2
Smart Fire Detector Isolator Type KFD0-CS-Ex1.54-Y72221
Smart Fire Detector Isolator Type KFD0-CS-Ex2.54-Y2
Smart Fire Detector Isolator Type KFD0-CS-Ex2.54-Y72222

21V 252mA 1.323W variants

Smart Fire Detector Isolator Type KFD0-CS-Ex1.56
Smart Fire Detector Isolator Type KFD0-CS-Ex2.56

See Annex for electrical data.

SPECIFIC CONDITIONS OF USE: NO

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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

Variation 8.1

To update QAR and to add alternative manufacturing location

File Reference: **25/0199**

Annex:

IECEx BAS 08.0079 Annex Issue 3.pdf

Input / Output Parameters

KFD0-CS-Ex2.54 and KFD0-CS-Ex2.54-Y1, -Y3 or -Y207412 - Dual Channel

Non-hazardous Area Terminals
(Terminals 11 & 12 and terminals 8, 9 & 10)

U_m = 253V

The apparatus is designed to operate from a d.c. supply of up to 40V on the above terminals.

Hazardous Area Terminals
(Terminals 1 w.r.t. 2 and 4 w.r.t. 5)

U_o	=	28V	C_i	=	5.64nF
I_o	=	93mA	L_i	=	0
P_o	=	653mW			

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

Hazardous Area Terminals
(Terminals 1 w.r.t. 2 and 4 w.r.t. 5)

GROUP	CAPACITANCE (µF)	INDUCTANCE (mH)	OR L/R RATIO (µH/ohm)
IIC	0.077	4.3	55
IIB / IIIC	0.64	17	199
IIA	2.14	35	431
I	3.39	51	671

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.

Note: the reduced capacitance of the external circuit (including cable) shall not be greater than 1µF for Groups I & IIA.

KFD0-CS-Ex1.54 and KFD0-CS-Ex1.54-Y1, -Y3 or -Y207411 - Single Channel

Non-hazardous Area Terminals
(Terminals 11 & 12)

U_m = 253V

The apparatus is designed to operate from a d.c. supply of up to 40V on the above terminals.

Hazardous Area Terminals
(Terminals 1 w.r.t. 2)

U_o	=	28V	C_i	=	5.64nF
I_o	=	93mA	L_i	=	0

P_o = 653mW

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

Hazardous Area Terminals
(Terminal 1 w.r.t. 2)

GROUP	CAPACITANCE (µF)	INDUCTANCE (mH)	OR L/R RATIO (µH/ohm)
IIC	0.077	4.3	55
IIB / IIIC	0.64	17	199
IIA	2.14	35	431
I	3.39	51	671

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.

Note: the reduced capacitance of the external circuit (including cable) shall not be greater than 1µF for Groups I & IIA.

KFD0-CS-Ex2.54-Y2 or -Y72222 – Dual Channel
Non-hazardous Area Terminals
(Terminals 11 & 12 and terminals 8, 9 & 10)

U_m = 253V

The apparatus is designed to operate from a d.c. supply of up to 40V on the above terminals.

Hazardous Area Terminals
(Terminals 1 w.r.t. 2 and 4 w.r.t. 5)

U_o = 25.2V C_i = 5.64nF
I_o = 43mA L_i = 0
P_o = 271mW

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

Hazardous Area Terminals
(Terminals 1 w.r.t. 2 and 4 w.r.t. 5)

GROUP	CAPACITANCE (µF)	INDUCTANCE (mH)	OR L/R RATIO (µH/ohm)
IIC	0.101	19.6	138
IIB / IIIC	0.81	72	508
IIA	2.89	153	964

I	4.14	233	1452

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.

Note: the reduced capacitance of the external circuit (including cable) shall not be greater than 1µF for Groups I & IIA.

KFD0-CS-Ex1.54-Y2 or -Y72221 – Single Channel

Non-hazardous Area Terminals
(terminals 11 & 12)

U_m = 253V

The apparatus is designed to operate from a d.c. supply of up to 40V on the above terminals.

Hazardous Area Terminals
(Terminal 1 w.r.t. 2)

U_o	=	25.2V	C_i	=	5.64nF
I_o	=	43mA	L_i	=	0
P_o	=	271mW			

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

Hazardous Area Terminals
(Terminal 1 w.r.t. 2)

GROUP	CAPACITANCE (µF)	INDUCTANCE (mH)	OR L/R RATIO (µH/ohm)
IIC	0.101	19.6	138
IIB / IIIC	0.81	72	508
IIA	2.89	153	964
I	4.14	233	1452

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.

Note: the reduced capacitance of the external circuit (including cable) shall not be greater than 1µF for Groups I & IIA.

KFD0-CS-Ex2.56 - Dual Channel

Hazardous Area Terminals
(Terminals 1 w.r.t. 2 and 4 w.r.t. 5)

U_o	=	21V	C_i	=	5.64nF
I_o	=	252mA	L_i	=	0
P_o	=	1.323W			

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

Hazardous Area Terminals
(Terminals 1 w.r.t. 2 and 4 w.r.t. 5)

GROUP	CAPACITANCE (µF)	INDUCTANCE (mH)	OR	L/R RATIO (µH/ohm)
IIC	0.182	0.56		26.9
IIB / IIIC	1.264	2.24		107.6
IIA	4.774	4.48		215.3
I	6.294	7.35		353.2

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.

Note: the reduced capacitance of the external circuit (including cable) shall not be greater than 1µF for Groups I & IIA.

KFD0-CS-Ex1.56 - Single Channel

Hazardous Area Terminals
(Terminals 1 w.r.t. 2)

U_o	=	21V	C_i	=	5.64nF
I_o	=	252mA	L_i	=	0
P_o	=	1.323W			

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

Hazardous Area Terminals
(Terminals 1 w.r.t. 2)

GROUP	CAPACITANCE (µF)	INDUCTANCE (mH)	OR	L/R RATIO (µH/ohm)
IIC	0.182	0.56		26.9
IIB / IIIC	1.264	2.24		107.6
IIA	4.774	4.48		215.3
I	6.294	7.35		353.2

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.

Note: the reduced capacitance of the external circuit (including cable) shall not be greater than 1µF for Groups I & IIA.